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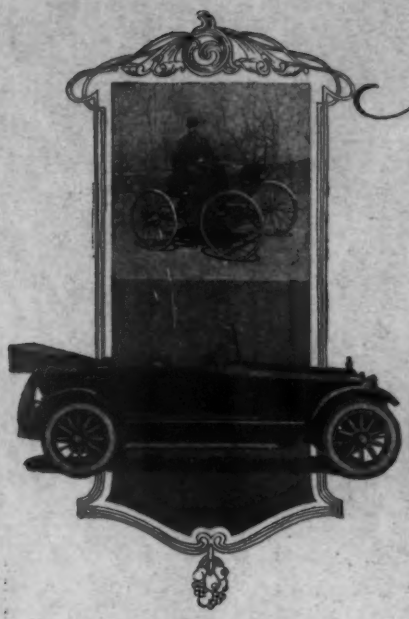

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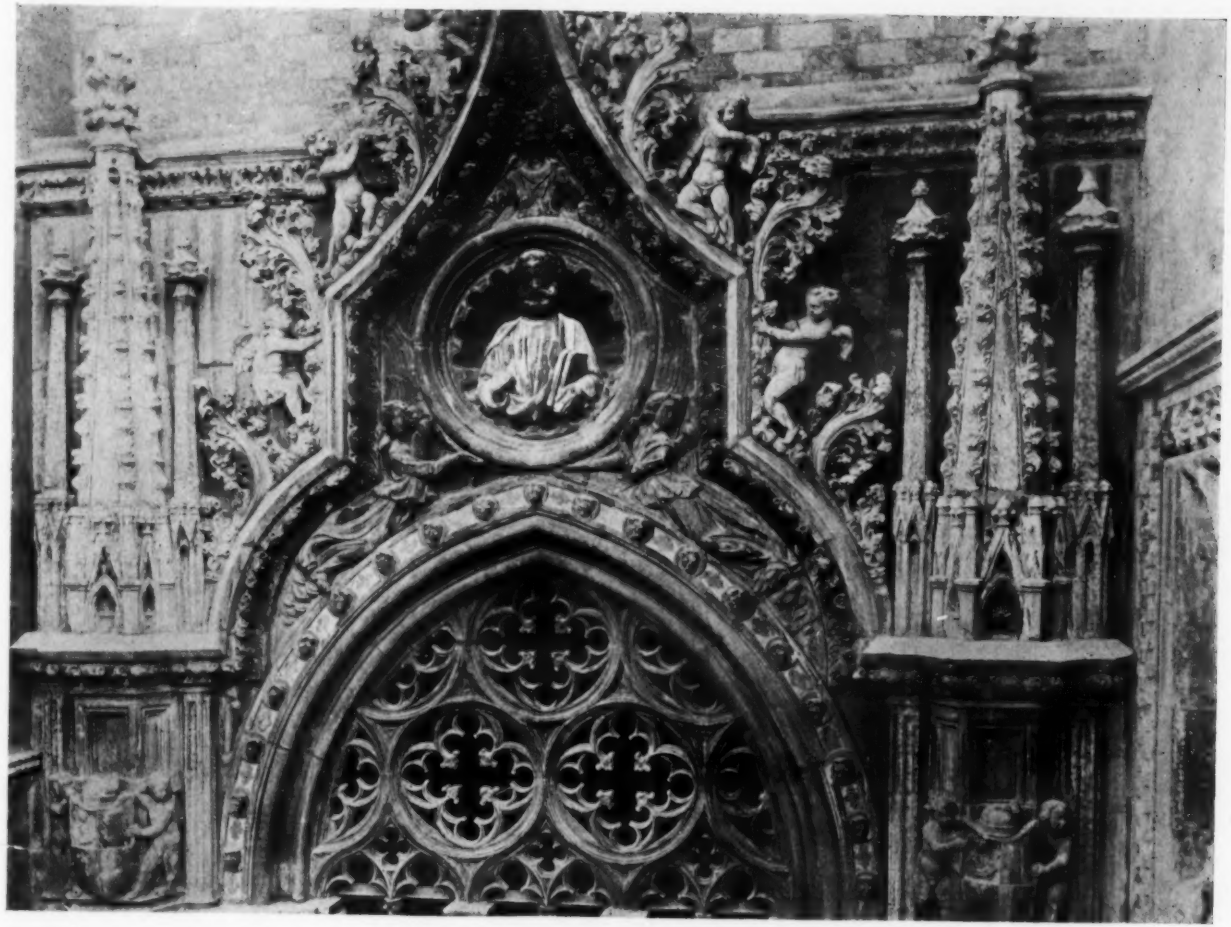
THE HAYNES AUTOMOBILE PLANT KOKOMO, IND. Eight course built up Paltex over concrete

The American Architect, published weekly at 243 West 39th Street, New York, N. Y. Entered as second-class matter January 6th, 1909, at the Post Office at New York, N. Y., under the act of March 3rd, 1879. Subscription price in the United States and Possessions, $10.00 per year. Issue No. 2316, dated May 12, 1920.



DETAIL OF WINDOW AND GABLE, VENICE

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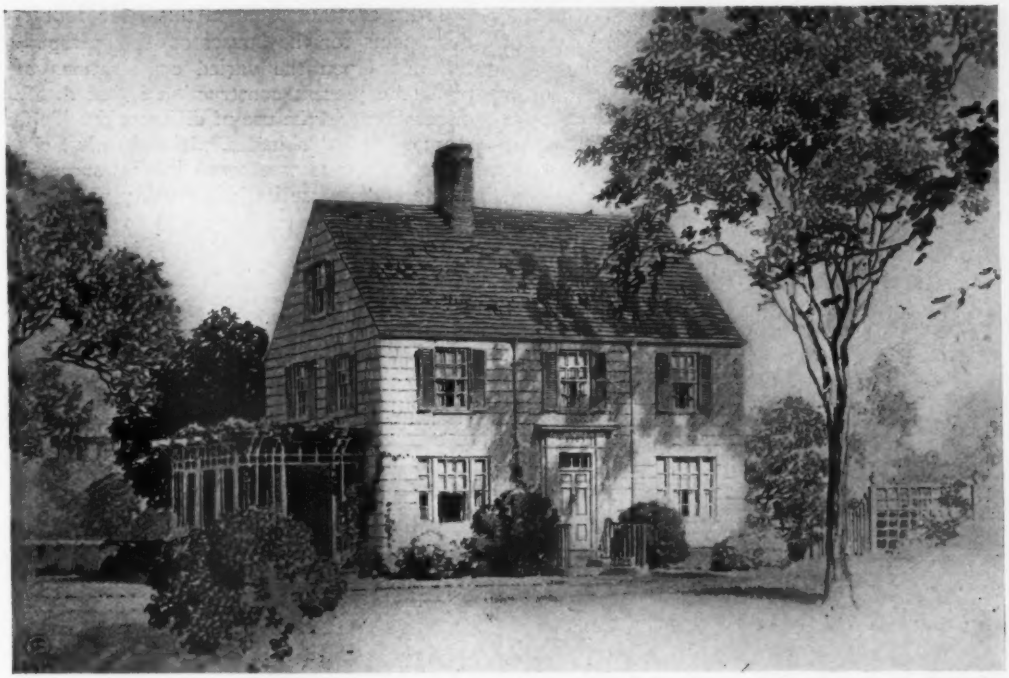

A VARIANT OF THE TYPE S HOUSE
MOTT B. SCHMIDT, *ARCHITECT*

The Artistic Development of the Standardized House

THERE has been a steady improvement in the quality of design displayed in the larger and more expensive houses, but the small dwelling seems not to have been given the attention by architects which it merits. The design of a low-cost house is quite as serious and as difficult a problem as the laying out of a big estate, for if the cottage is to have distinction it must be simple and without useless ornament. The limitations of space demand a fine and sure æsthetic feeling. Only by an experienced and well-balanced mind can there be attained the discreet taste which brings such a simple problem to perfection. For quality of simplicity and style do not drop from heaven.

The limitations of money enforce an extreme practicality. The occupant would like to have in his house every convenience that appears in a house costing twice the money. From every inch of space must be pinched full use. The economy of material and labor must be always in mind.

No doubt half the women in the country think they could draw such a house with a lead pencil. But serious problems are involved which deserve the best attention the architects can give. Indus-

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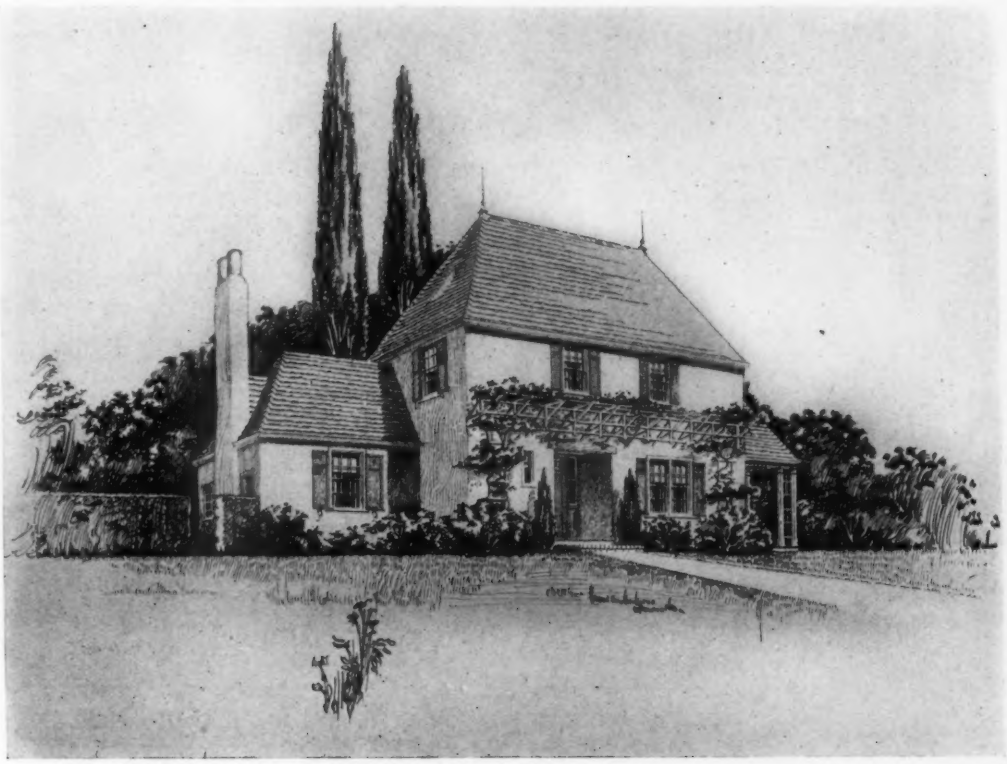
trial communities were so rapidly expanded during the war that the housing developments gave opportunity for the best men to attack this problem. It is a pity that the findings of their experience are not more widely distributed.

In one of those fits of economy that occasionally overtake our Government, even the admirable report of the Housing Board, which would be of incalculable value, was issued in such a limited edition as to be practically unobtainable. But the point of attack has been shown. The economy of group construction has been instilled into the popular mind and in all large cities it has been, or is being, adopted as a part of some plan for relieving the present housing shortage.

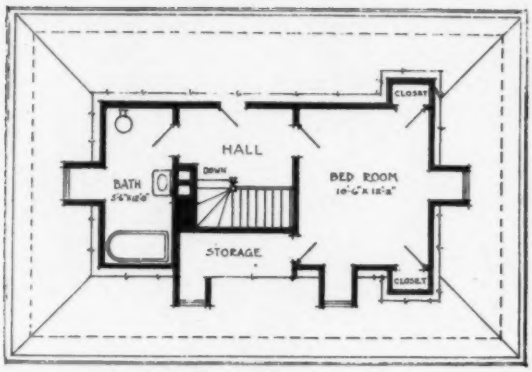
Most of these efforts are to satisfy the needs of those who are able or willing to pay from three to six thousand dollars for their home. But in a suburb of New York on Long Island a building development is under way which utilizes the advantages of standardization but avoids the monotony and lack of artistry of the commonplace, stereotyped building project. Three architects, Messrs. Mott B. Schmidt, George Gilbert and Aymar Embury II, have been retained by the development corporation. They have each furnished plans which will be used in the erection of one hundred houses adapted to the needs of suburbanites. The first installment of twenty-five houses is now under way; several of them are nearing completion. These houses are being constructed to sell at from ten to fifteen thousand dollars.

There are illustrated in this issue four types of floor plans for the houses and ten perspective exteriors. Upon the varied combinations of these plans the present construction is based. Varying orientation and the use of different outside finishes: stucco, stepped shingles, plain shingles, clapboard, paint, stain, and weathered finishes succeed in giving to each house its individuality and a variety is secured for the colony which is heretofore rare in such developments. For the interiors, individuality is similarly achieved in the choice of floor plans, of interior finishes, mantels, balusters, tiles and other architectural features—all of uniform types but never uniformly applied.

VARIATION OF THE TYPE G, SIX-ROOM HOUSE
GEORGE GILBERT, *ARCHITECT*



TWO VARIATIONS TO TYPE E HOUSE
AYMAR EMBURY II, *ARCHITECT*



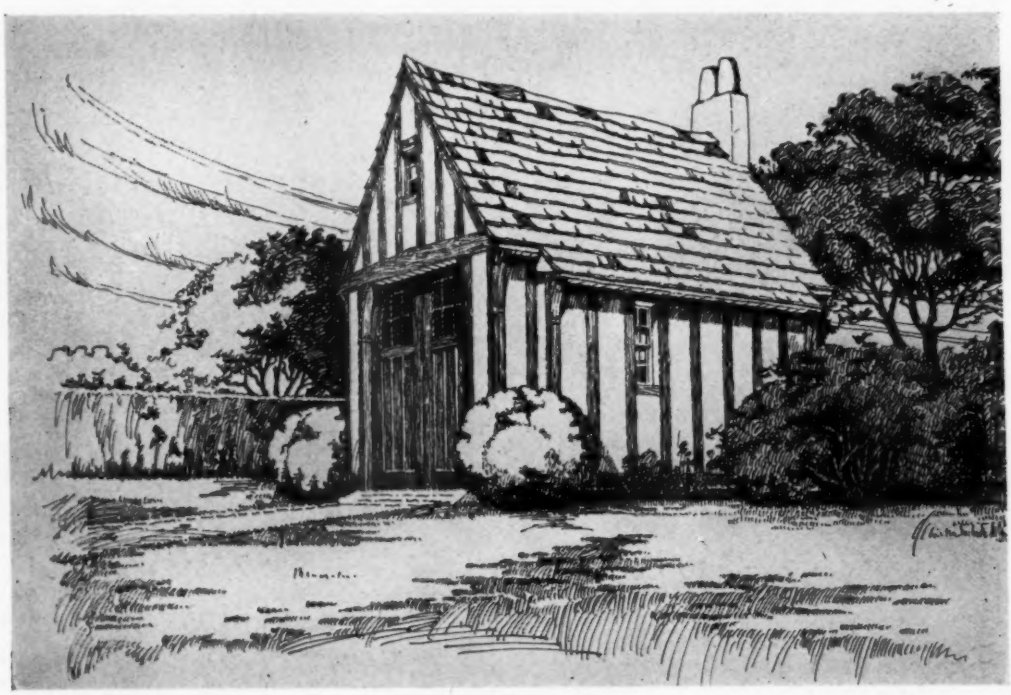
THIRD FLOOR PLAN, TYPE S

The origin of the idea seems to be with that valuable experience which this country gained in the development of its housing to suit the urgent demands of munitions employees and by an adaptation of that experience to the consideration that an American family wants its home to be as much unlike the other houses in the street as is consistent with economy.

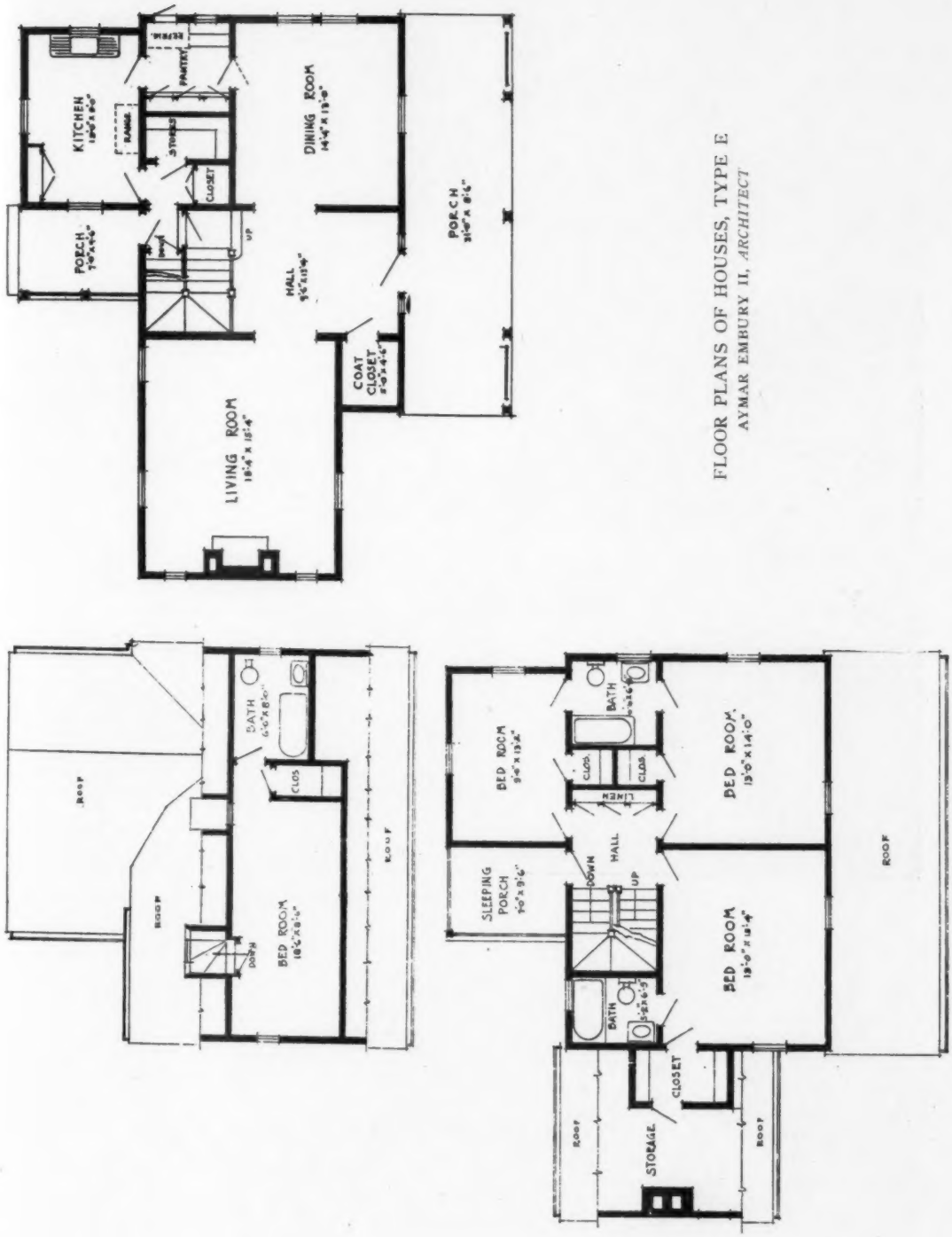
By uniformity in the building of small houses, a construction system may be developed which greatly shortens the time needed by the workmen. A fireplace built in one house may be more quickly executed in a second, if the same men move on to a third with the experience gained—the quickest and easiest way of building this unit is soon discovered. In war-time building the element of time saved was most vital, but it became also apparent that this meant a saving of money. What might otherwise go to payment for the men's time may be spent for superior materials and for those refinements such as laundry chutes or cedar closets which they could not afford to include in a ten or fifteen thousand dollar house built singly. It is upon such an economy that these houses base their claim to interest.

The man who builds a house of moderate cost for his home mistakenly fears that he cannot afford the services of an architect. His plans therefore, are developed by the local carpenter or builder whose taste and knowledge of proportion is far subservient to the enthusiasm with which he applies decoration. The results have been evident in all middle-class suburbs.

And when, by another alternative, the houses of such a community are all built by a realty company, they are ordinarily from stock plans with every—



A ONE-CAR GARAGE
AYMAR EMBURY II, *ARCHITECT*



FLOOR PLANS OF HOUSES, TYPE E
AYMAR EMBURY II, *ARCHITECT*

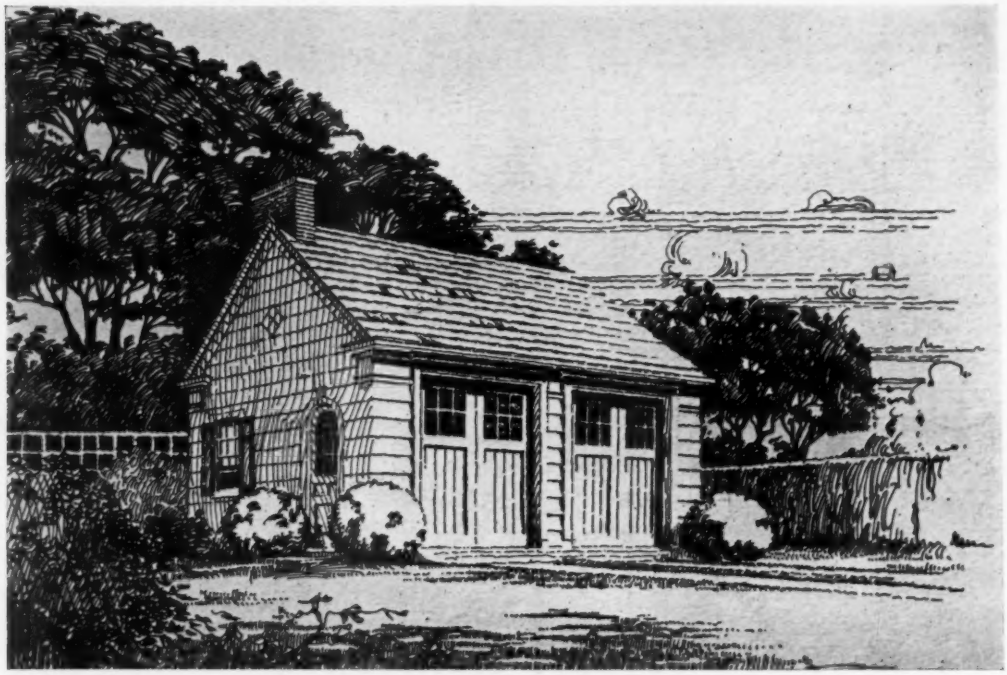
or with every other house alike in long but uniform rows. However well proportioned such a unit may be, it does not satisfy the developing public taste. Or, if the public has no taste, these serrated rows certainly do not aim to develop one.

The way between this Scylla and Charybdis is shown in the housing now illustrated. By a more active working relation between the architects and the investment corporation and by a willingness on the part of those financing the property to admit the commercial value of beauty and to spend money for it, a community is growing which may make some just pretense to be an environment for modest and refined homes. The architects have been permitted to provide several types of houses instead of the one which might be stamped out *ad nauseam*. In providing these several designs the architects on their part have adapted the plans to group construction. They have provided in some cases interchangeable floor plans, in others that either of two sides of a house may face the street, as well as that doors, mantels, kitchen sinks, bathroom fittings, heaters, etc., may be bought in quantities.

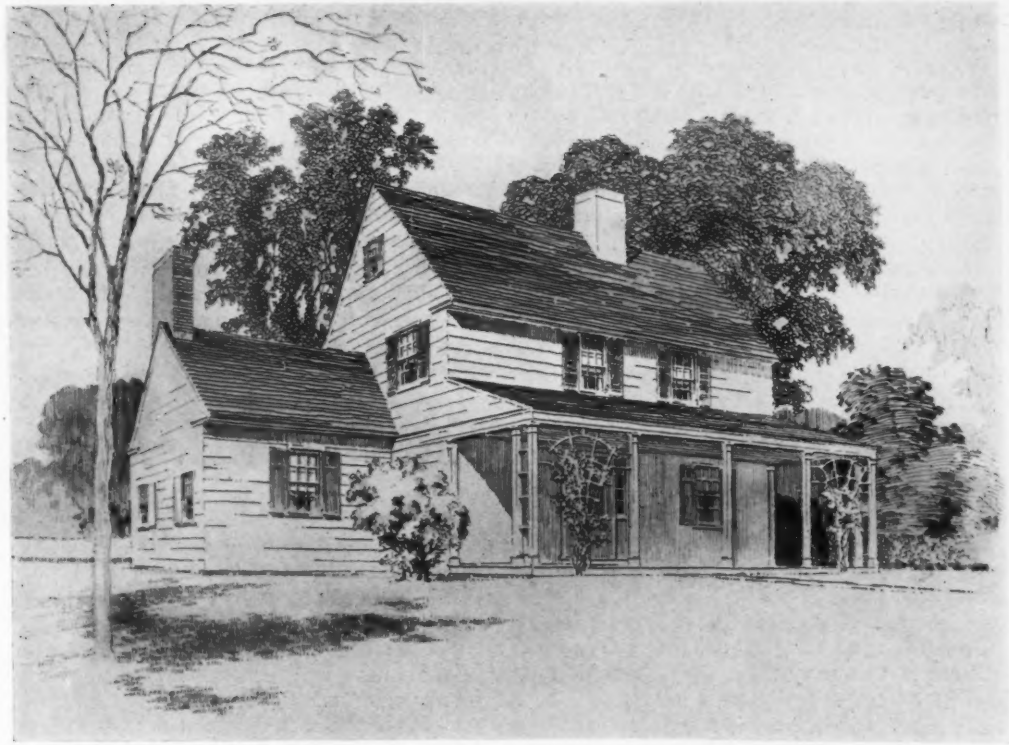
The next step with this theory of building group houses will be to educate the manufacturers so that with the retention of certain essential standards the finish and fittings shall be varied in some obvious aspect which shall adapt them for carrying out the style or feeling of the house in which they are used.

A man need not be so very old nor so widely traveled to recall the days when large numbers of laboring people at manufacturing plants and even suburban dwellers were housed in rows of so-called "villas," the monotony of whose exterior killed every last spark of individuality. While our war experience helped greatly to effect reforms in the designing of the low-cost house, it would not be just to groups of architects all over the United States to claim that it was war's emergencies solely that have brought about this very desirable improvement.

For a decade or more the town-planning movement has been steadily coming to the front, and the intricate problems that this movement has developed have received the thoughtful care of many highly trained and exceedingly competent architects.



A TWO-CAR GARAGE
MOTT B. SCHMIDT, *ARCHITECT*



TWO VARIATIONS OF TYPE E HOUSE
AYMAR EMBURY II, *ARCHITECT*

It was through the influence of such men that those who ruled large commercial operations were brought to a realizing sense of the value as a commercial asset of good architecture. The development of manufacturing building design created a pride of occupancy of those who worked in these buildings and the desire to have equally attractive homes was a natural result.

This movement has now, fortunately, spread in every State, so that today there is a certain development of the low-cost house which indicates in the most emphatic manner the using of a higher level of our standards of domestic life. Naturally those who promote suburban building operations in a speculative way desire to combine every element of business thrift in the furthering of their schemes. Standardization of plans, when the plans have been as thoughtfully developed as in the present instance, will present but few objections and these will be thoroughly overcome when the exteriors show such wide and artistically diversified elements as these architects have skillfully worked out.

Standardization and the A. I. A.

WASTE of abundance is deplorable. But waste of that which is not sufficient to supply demand is criminal. All crime is against public policy.

The American Institute of Architects advises its members that their duty toward the public takes precedence even over their duty toward their clients.

Article 18 of the Institute's statements of "Principles for professional practice" states in part, speaking of the architect: "He should not, even under his client's instructions, engage in or encourage any practices contrary to law or hostile to the public interest; for as he is not obliged to accept a given piece of work, he cannot, by urging that he has but followed his client's instructions, escape the condemnation attaching to his acts."

Having admitted that waste is against public policy and that the American Institute of Architects stands unequivocally for the best interest of the public, it may be concluded, without the formal action of a convention of the Institute, that the Institute is for standardization, if standardization is in the interest of the public.

There can be no question but that the Institute believes that standardization is desirable in certain particulars; always the Institute has lent its co-operation to worthy national movements, which have been working toward standardization. Note their early co-operation with the old National Builders' Association in the preparation of a uniform contract between contractors and owners.

For more than fifteen years committees of the Institute and its various chapters have been working for standardization of catalogs. The Institute has co-operated with the American Society for Testing Materials in its work to secure standard specifications, notably of steel and cement, but also of many other materials.

The Institute has co-operated with the National Fire Prevention Bureau, the Underwriters' Association and various organizations looking toward the perfecting of right standards with reference to fire protection.

For more than ten years the committees of the Institute have been working on standard forms of specifications, bonds, forms of proposals, etc.

There has been no question as to the advisability of securing uniform practice in the foregoing matters. The question now seems to arise as to whether it is not possible, without encroaching on aesthetics, to greatly extend the field of standardization. For surely it must be conceded as a premise to any discussion of matters pertaining to building, that the Institute stands unequivocally committed to the principle that the public interest demands that there must be individuality in design and arrangement.

Building is not architecture unless it gives vent to individual expression. So long as the function of architecture is the housing of human beings, so long must architecture lend itself to the ideals, the ends, the aims and the purposes of different peoples.

The wisdom of the Creator in making men different is not to be questioned. The outstanding fact is that they *are* different.

Since it is the function of the architect to take cognizance of facts and harmonize them into a logical, economical arrangement, to do this in such a way as to secure comfort and safeguard the life and health of the occupants of a building, to inclose the plan with a covering which is an orderly, consistent expression of the purpose of that plan, it is likewise the architect's duty so to shape this inclosure so as to make it personally pleasing and harmonious. Therefore all true architecture must of necessity take on individual characteristics peculiar to individual occupancy.

The human form is more beautiful than any

other creation of God, because shining through that form is the human soul, but since the soul is individual in character, the expression of every human being, although similar in form and structure, is yet different in line. Likewise, since architecture is the expression of human need, true architecture must be different as well as pleasing and harmonious.

Public duty forces the American Institute of Architects to take firm stand against extremes in standardization, extremes which would tend to take the personal element out of design, extremes which would build our cities with monotonous rows of meaningless mediocrity, illustrated by the abominable aggregations of the ambitious speculator. Fit hatcheries of Bolshevik bunk—destroyers of ambition, monotonous leveling. Surely such living conditions cannot be expected to incubate high ideals.

Forewarned against extremes of standardization, it may be observed that not more than 25 per cent of building make-up can be classed as essential to the spiritual expression of occupancy. The remaining portion of all buildings is practically common in function to most structures.

It is to this portion of building make-up that the American Institute of Architects can be depended upon to lend its complete co-operation in the matter of standardization.

Even in the realm of standardization, however, emphasis must be laid upon the importance of complying with the rules of good taste in design. It costs no more to make stock moldings in accordance with established rules of good design than it does to make them atrocious combinations of the compass-produced curves. All it requires is that the manufacturers of these standard materials shall call to their assistance expert designers.

Witness the transformation that has come over the product of the commercial tailor in the last twenty-five years. Ask any successful clothing manufacturer if he would go back to the old system, or rather, lack of system, in design. Have they employed standardization methods? Certainly they have, but the designing departments of all of the leaders in this line are manned by masters in the realm of art.

Correctly proportioned garments are no less warm because they commit no offense against good taste and certainly they contribute much toward the upward look and confident step of their wearers. Hark back to the farm. Remember the warm, substantial mother-made trousers of a schoolmate of boyhood days? Did they not serve every practical function? Were they not interchangeable, forward acting and back acting? Were not the behind and the before exactly alike? Certainly they complied with all the rules of standardization, except good taste, but to that poor lad they meant shame, mortification, disgust—conditions of mind not conducive to noble thoughts.

Brick should be standardized as to size, but face brick never as to color or texture. The human eye demands restful change.

Lumber should be universally standardized as to size and grading rules.

Manufactured moldings, both in wood, metal and composition, should be standardized as to size and outline, but the greatest skill should be exercised in their design. Stock moldings should consist of the elements of good moldings so skillfully selected as to make possible innumerable pleasing combinations out of limited stock. This is practical, and at the same time would decrease cost of production and distribution. Properly designed molding elements would be used by architects as well as speculative builders. Speculative building would be less offensive against good taste and specially designed buildings would be reduced in cost by using stock materials. All that is needful to bring this about is for national associations to employ competent designers and issue standard templates and for all manufacturers to co-operate.

Mortar is a medium for uniting masonry parts. There is no reason why it, together with all materials entering into its composition, should not be standardized. Why should we have Haverscamp and Preservemysore wire? Why not have a national association prescribe, say, three grades of wire insulation, and let all manufacturers standardize on same and let the consumer purchase from the nearest source and thus save freight and useless confusion?

Why have different roughing-in measurements for the same type of plumbing fixtures? All that is needed to eliminate enormous waste in this line is national agreement as to standards.

Why 7000 brands of waterproofing with high-sounding names and pestilential salesmen who swoop down on architects' and engineers' offices like the barbarian hordes of the North which consumed Rome? They toil not, neither do they spin, neither do they know chemistry, yet a peculiar secret formula is their plea.

The fundamentals of waterproofing can be summed up in a half a dozen well understood formulæ. Why all this waste of gas?

Why 990 different locks when twenty would cover the whole field and leave something for the distinctive design of exposed knobs and escutcheons?

Why five to twenty different quantity surveys for estimates on one building? One carefully prepared survey would insure better and more accurate results, and if the practice was followed throughout the nation, would conserve man power and save millions on millions of dollars of expense.

Why innumerable cost accounting systems leading to endless confusion and waste? It would seem as though two or three well-thought-out systems would be sufficient to cover the whole field.

Why not have standard times and seasons for making statements, issuing certificates, for payment and receiving payment?

All of these whys will lose their force when national associations have completed their investigations, have issued their pronouncements and local co-operation has put them into practice. Then and only then will the present enormous waste of resources be eliminated and the public interest adequately served by the construction industry.

Berne—City of Mediæval Fountain Statues

BERNE, the capital of Switzerland, occupying a truly ideal situation on a rocky peninsula formed by the river Aar, in full view of the snow-crowned glistening chain of the Bernese Oberland Alps, proves a constant delight to all lovers of well-preserved mediæval architecture. It is a city of cosy arcades, ancient gates and towers, and notably of handsome fountain statues. A reporter for the International Syndicate describes these at length in the following words:

These fountains, he says, are the special pride of the Bernese and a particular object of admiration on the part of all visitors. The constant merry babbling of a spring brings life into the greatest solitude and the sweet monotony of the flowing water seems to soften any harsh and irritating noises caused by the every-day traffic. In biblical times already we find the fountains mentioned as a meeting place and while they are not used to the same extent in these modern days, yet we perceive that they are frequently patronized. Horses and cattle are watered here and the children take a particular delight in making a fountain the center of their playground. Yea, some old-fashioned women could not imagine the possibility of a successful washday if they were not able to avail themselves of the abundant water supply of some fountain; and so it often happens that one can enjoy the most picturesque and animated scenes at the foot of one of those fascinating, silent fountain statues.

These fountain figures, which are mainly emblems of the various trade corporations or guilds, are the most precious reminders of Renaissance art in Berne, and, as they have in recent years been restored in their original gray colors, their unique beauty can again be seen to full advantage.

On our stroll through the Spitalgasse, we perceive, first of all, the comical Bagpiper Fountain—put up by the fraternity of this joyous profession, which also included the wandering musicians. The statue represents a handsome young man blowing the ancient instrument of his guild; a monkey behind his back seconds him in his performance, and a goose at his feet plays the attentive listener. His garb is typical of the unconcerned life of wandering minstrels. His shoes permit of an ample display of the toes, and the only bright features of his upper garments are the gilt fringes which adorn it.

Two interesting fountains stand in the adjoining Marktgasse. One statue commemorates Mrs. Anna Seiler, the founder of the Seiler Hospital, which, in later years, developed into the now famous Insel Hospital. The figure shows a graceful, handsomely dressed woman pouring water into a basin. The other statue, which was erected by the fraternity of the sharpshooters right in front of their guild house, represents a warrior in uniform ready to take part in some friendly military tournament. In his right hand he is holding the banner of the sharpshooters, and a small bear seated at his feet points his rifle in a protectory manner toward the entrance door of the guild house.

Further on, in the Kramgasse, we find the Zahringer Fountain, erected by the city in honor of Berthold V, of Zahringen, the founder of Berne. The figure consists of a bear in full armor carrying the banner and coat-of-arms of the house of Zahringen—a golden lion on a red background. A cub nestles comfortably at his feet, and feeling perfectly safe in such protection, it gracefully devours some grapes.

In the Kramgasse too is the curious Samson Fountain, representing the fight of that hero of the Old Testament with the lion. The Bernese were fond of pointing to Samson as a typification of old Bernese courage and the original report about the battle of Laupen in 1339, where the Bernese under Rudolph von Erlach gained a victory over the army of Fribourg and its confederates,

(Continued on page 583)

EDITORIAL

Remodeling London

AT a recent meeting of the Royal Institute of British Architects Mr. Delissa Joseph read a paper on "Higher Buildings for London." The present limit of height is 80 feet. Mr. Joseph advocates that buildings 200 feet high be permitted facing parks and the river and that in the case of thoroughfares more than 80 feet wide buildings be carried up to a height equal to the width of the thoroughfare.

Two hundred feet, compared with the buildings of downtown New York, is not very high, but it would make a distinct effect upon London's skyline. It might belittle the effect of the exquisite spires of London churches. And it would most certainly augment the demands upon the transportation systems. These are dangers which might with wisdom be counteracted.

Some of the objections offered are quite amusing to the American mind. One gentleman asks, if children are living sixteen to seventeen stories up, how are they to get out to play. He foresees the elevator getting out of order and old ladies climbing 400 steps. He imagines a fire and no means of fighting it, no means of escape and an appalling loss of life.

The very interesting proposal that areas of 50 acres be taken at a time, the old low buildings torn down and new ones erected with open spaces between was said to be impractical because the workmen who were to live in them wanted, not so much hot water and central heating, but a plot of ground where they could raise cabbages and potatoes. A London workingman does raise a surprising amount of truck in his little garden—but inasmuch as the higher buildings would occupy less land than the old ones, it is hard to see the force of the argument. The effect of these groups of high buildings surrounded by parks, playgrounds and truck gardens might be most attractive. There is no reason why care should not be taken (as we have not done) to protect the dignity of church spires, old palaces or public buildings from the immediate proximity of the skyscrapers.

THERE is no reason why æsthetes should view with alarm "beetling heights, towers of Babel and concrete cliffs." Such beauty as there is to London is not in the monotonous sea of two-story cottages which stretches endlessly from Peckham Rye to Hampstead. But in this sea there lie little green islands—charming little islands—so unexpected, so inviting, so quiet that after one pauses and goes in one feels that at last he has found a home. The past and the future drop away before the impressive peace and calm of the immediate present.

London in May! Think of it! Flowering shrubs and lawns, tulips and hyacinths—and outside somewhere the beating pressure of the great city. Could it ever become a Downtown New York or a Loop District? God forbid. But for the addition of another Lincolns Inns Fields, a Finsbury Circus or a Bunhill Fields, and for a few more "Greens" and "Commons" here and there, who would not sacrifice the endless dismalness of cottages and accept in their stead groups of apartment houses.

"Americanism"

IN a forceful editorial on Americanism, the Newark *News* seeks to safeguard our constitutional rights by calling an abrupt halt on the misuse of the word "Americanism." This is a subject that cannot be too insistently reiterated. As the *News* very rightly claims, Americanism does not mean what some people are trying to make it mean. Its connotation must be kept clean and clear. Then, representing as it should, all that is sacred to the natives of this land, it would not be conjured with by men unscrupulously using the very force it bears. It should not be used to further ulterior motives instead of the idealism and progressiveness for which it actually stands. Americanism is not a code of conduct; it is a state of mind.

To apply the word for a special individualistic or class purpose is not only deceitful treason, but socially dangerous. "If Americanism means that," a man may say, referring to some improper application, "I don't want Americanism."

Some social and industrial reforms are attacked as "un-American." Even criticism of existing conditions, no matter how sincere or just, often bears the same stamp. It has become, in the minds of some, un-American to protest, to present grievances, despite the fact that "the right of people to assemble and present just grievances" is one of the corner-stones of the American Constitution.

Americanism is not a cloak behind which to hide. It is not an eternal negative to all proposed changes. It is not worship of what has been. Neither is it the opposite. It may be one or the other, depending upon the circumstances involved.

Unless the word is to have a false or perverted connotation, its loose use must end and people, in using it, must search their souls deeply lest they desecrate a beautiful and lofty word-conception.

Profiteering in Labor

THE present unsettled conditions in the field of labor are responsible for the development of abnormalities that seriously affect an early return to static conditions. Further, in the case of shortage of labor, supply methods are being pursued that are reprehensible from the standpoint of business integrity. Competition is the life of trade, but only competition that is honorable and straightforward. Any other methods are simply business dishonesty.

There are certain ways of handling labor on construction. A builder may join a local group of contractors and work in co-operation in supporting the local existing agreements. He may learn all the factors as affecting the local building situation and either work with the other builders or independently as he may elect. Or he may enter the field of labor, over-bid existing scales and by specious allurements win labor from his building competitors. The first is the method pursued by honorable men, the second stalks very near the rim of reprehensible methods, the last is a badge of business obliquity.

It is learned that in some sections builders with large contracts who have entered local fields have raised rates and otherwise upset existing agreements. Inasmuch as owing to the lack of stability both as to labor and materials, the majority of building contracts are today proceeding under a cost-plus agreement, such irregularities largely augment the cost of construction and place a burden on the owner that he should not be compelled to assume. And if any argument was needed further to prove the vicious principle that underlies the cost-plus contract it could certainly find its main contention in conditions where contractors over-bid an already abnormally high scale of wages.

As a form of profiteering in the building industry, dangling a bait of high wages based on an advance over agreed scales is as truly profiteering as any form that is now being carefully investigated by the Government and has thus far led to a large number of well-merited convictions.

Further, this action in over-bidding agreed wage scales is utterly selfish. A contractor, having entered a local market, thoroughly unsettling its labor conditions by angling with high wages for labor, retires with his profits and leaves the local contractor to suffer from an unsettled condition for which he is in no way responsible.

Berne

(*Continued from page* 580)

mentions that the men from Berne met the enemy after the style of Samson, bold and unafraid.

From the Kramgasse we emerge into the Gerechtigkeitsgasse, in the middle of which we perceive the fountain of the same name, i. e., the Fountain of Justice. The statue shows a blindfolded woman with a pair of scales in her left hand. At her feet are four small figures—Pope, King, Sultan and Burgomaster—the representatives of the different kinds of state legislation. All listen earnestly and with closed eyes to Justice, admitting her sovereignty in each and every land.

The most curious of Berne's fountains is, however, the Ogre Fountain, representing a Jew in the act of devouring a child, while several other infants are held in readiness in his pockets. The sight of this statue has still an awe-inspiring effect on all youngsters, and the name of it alone frequently suffices to change a naughty behavior into a docile one. The figure is said to have been erected in memory of a ritual murder wrongly attributed to the Jews. On the lower portion of the column a procession of armed bears appears to be bravely marching to battle.

While Berne is not the only Swiss city which can pride itself with such truly artistic ornaments, the fountain statues of the capital are particularly noteworthy for the remarkably uniform execution of the characteristic figures and the regular and unique distribution over the town.

Pompeian Wall-Painting

The interest in period rooms, or rooms finished in a definite style, is not an essentially modern characteristic. Just as we today endeavor to adorn our homes with harmonious decorations, so the ancient Italians strove to beautify their dwellings. And these decorations, because of the nature of their buildings, and because of the desire of the people themselves to emulate palaces of the nobility, took the form of wall-paintings, or frescoes. The best examples of these ancient decorations, which, paradoxical as it may seem, were preserved only in their destruction, are to be found in and around Pompeii. Because of this fact, according to *Arts and Decorations*, all ancient Italian frescoes are classified as Pompeian in style.

They are found, as has been said, upon the walls of the houses. The Italian house was built, as is true even now, of stucco, a sort of plaster finish over a foundation of brick. But we should not confuse ancient plaster with our knowledge of the crumbly plaster of today. The process of its application is more complex. Upon the rough foundation, *trullissatio*, are laid in succession, evenly and smoothly, three coats of lime and sand. Then follow three coats of lime and marble dust, "at first coarse, then finer, and in the uppermost coat of all the finest powder." The wall may now be finished either with a high polish, which may "attain such a brilliancy," says Vitruvius, "that one can see his face mirrored in its surface, or with a coat of color applied in the fresco technique."

Although the circumstances of the original discovery of the process of fresco painting, *udo illinere* —"to paint upon the wet"—as Pliny calls it, are unknown, yet the method was a matter of common every-day knowledge to the ancient Italian. Stated in simplest terms, fresco painting is painting with a wash of liquid pigment over the freshly laid surface of plaster, thus becoming incorporated with it when it is dry. The explanation of this process is a chemical one. When the limestone is burnt into lime all the carbonic acid is driven out of it. When this lime is slaked by being drenched by water it drinks this in greedily and the resultant paste becomes saturated with an aqueous solution of the hydrate of lime which rises to the surface of the plaster. As the wet pigment is applied to this liquid hydrate of lime, it diffuses into the paint, soaks the plaster through and through and gradually takes up carbonic acid from the air, thus producing carbonate of lime, which acts as the binding material, forming a sort of crystalline skin and gives the colors a peculiar lustre.

Fresco technique is essentially a color finish to plaster. The pigments are mixed with nothing but pure water and palette of the artist is limited practically to only the earth colors, such as the ochres, even white having to be made from lime. White lead, vegetable and metallic pigments, Vasari tells us, do not hold their colors so well and are as a rule avoided.

Pompeian wall-paintings can be grouped under four general classes depending upon the period of their origin. Pompeii was essentially the home of rich traders, who possessed sufficient means to want if not to afford elaborate dwellings. In order to obtain the grandeur of marble palaces there was devised a plan of painting in imitation of marble slabs

in relief. This is known as the incrustation style and dates from pre-Roman times.

Developing from this style of incrustation, and contemporary with the Roman Republic, arose the device of imitating both the marbles and the panelled reliefs by painting. Moulded cornices were employed somewhat, but their projections became very slight.

The third style, of about the same period as the Roman emperors, was the least faulty and the most refined of the four styles. Here the human figure assumed greater importance and we find nymphs floating in diaphanous drapery against solid backgrounds of deep color. Fauns and bacchantes dance endless sarabands under light porticoes in the friezes.

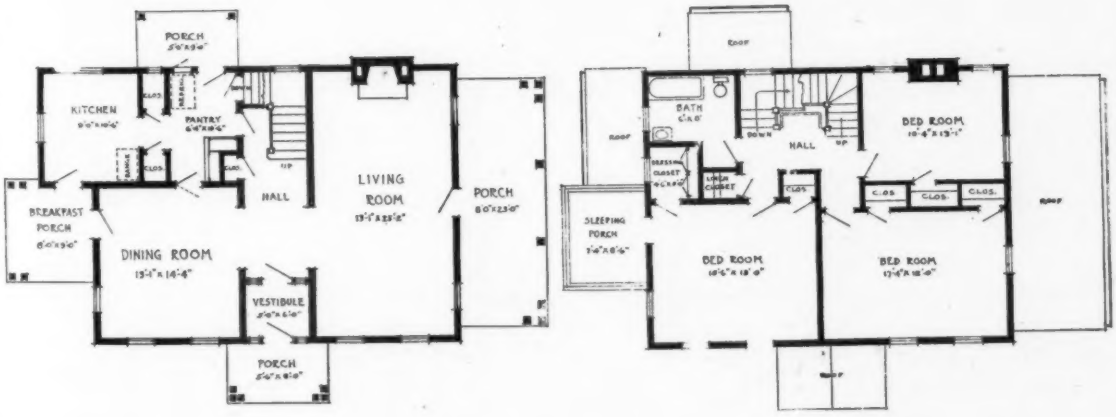
It is this architectural feature which the fourth period developed to a pompous and theatrical extreme, with its spindlelike columns and its all too slender caryatids. This style dates from the year 63 A. D., the time of the earthquake, when the city was severely shaken and many of its important houses were destroyed, to be rebuilt optimistically, to the year 79 A. D. This was the date of the final destruction, when the gleaming sword which had hung so many years over its head fell, and the city was buried under a rain of ashes vomited forth by Vesuvius.

Nor were these decorations confined exclusively to the rich, for even as we employ workmen to paint our houses, so the Pompeian commissioned the decorating of his walls. Nevertheless these paintings possess to a surprising degree a charm and a grace that belie their artisan origin.

The School of Design has recently acquired a piece of Pompeian wall-painting, which is an excellent example of the third period, and characterized by the careful modelling of the features and by the background of deep color. Here we have pictured a woman, seated, three-quarters front, holding a lyre in the crook of her left arm to which she points with the right hand. The gesture indicates that the instrument is thought of as an attribute, and the evident feminine characteristics of the figure lead us to suppose that the muse of music is intended, despite the fact of the popularity at that time of the feminine type of Apollo. The symbolic pose of the figure is paralleled in the Apollo in a fresco at Pompeii depicting the Marsyas and Apollo legend. Nor is this idea unusual or unique, for we find a similar composition even in the works of Greece, notably in a relief on the marble base from Martineia, now at the National Museum, Athens. The simple hairdress, the restrained features of the face, the dignified folds of the garments, all bear out the conception that the figure is an abstraction rather than a concrete portrait. She wears a tunic, twisted on the left shoulder and draped loosely over the right, revealing a neck delicately tinted in flesh tones. Over all is thrown a flowing outergarment of violet contrasting sharply with the brilliant red background. She is seated upon a highly ornamented chair—or is it a sort of architectural parapet—and as such conceivably a part of a larger design. At the base of the stool is a portion of a wing. Can this be the wing of a sphinx? Such a figure would work into a larger decorative scheme. Parallels of the sphinx motives are innumerable.

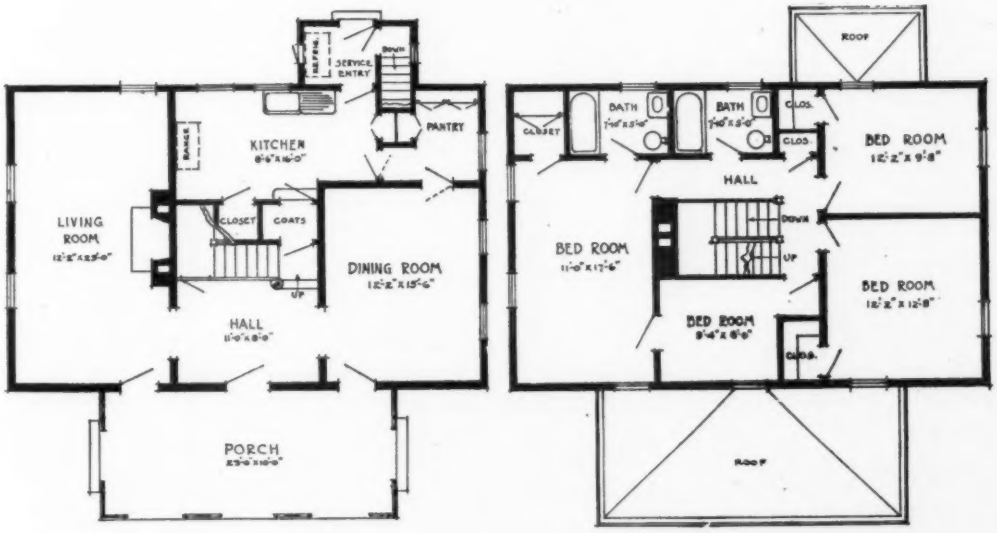
The seated figure in Pompeian painting is common, but usually in profile or full front positions, the intermediary pose only rarely. The closest parallel to our muse is found among the Boscoreale frescoes in the Metropolitan Museum of Art. I refer particularly to the painting of the Woman Playing the Lyre from the grand triclinium. Here we have pictured, seated upon an elaborately decorated chair and richly decked with jewels, a woman playing a lyre. Behind her stands a girl, an interested listener to the music. The same grace and charm are displayed in this group as is evinced in the School of Design painting. The facial types are similar, the hair-dress is identical and the shoulders are turned at the same angle, but the position of the feet differs. Both wear white and violet robes which are juxtaposed against a brilliant red background. The striking difference is that in one we evidently have a portrait, but in the other an allegorical figure.

The allegorical tendency of Pompeian paintings is more nearly typical of that Greek culture which they mirrored. Their importance lies not so much in giving us a conception of the Hellenistic character of Roman life, as in preserving for us an inkling of their prototypes, the Greek paintings themselves.



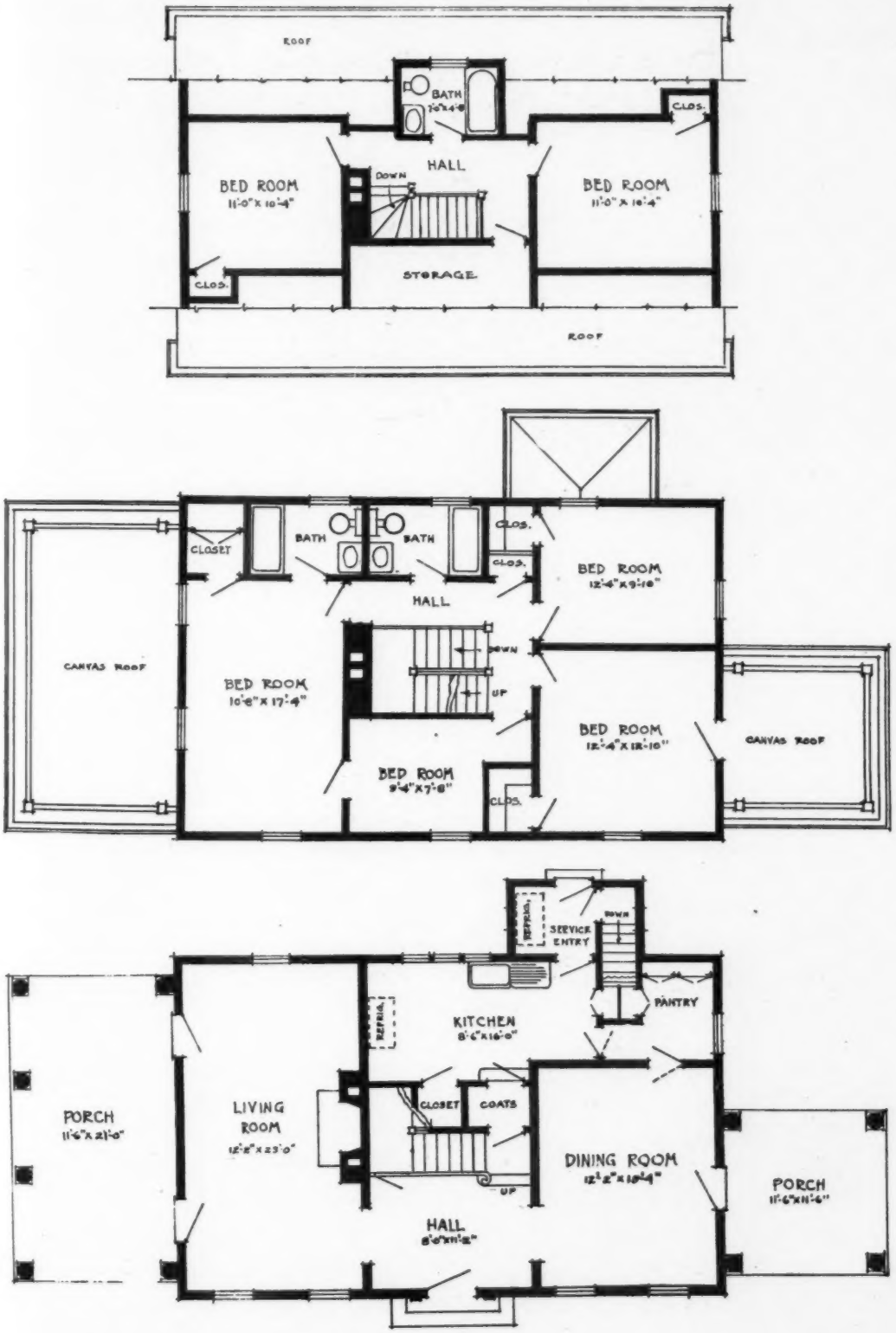
SIX-ROOM HOUSE—TYPE G

GEORGE GILBERT, *ARCHITECT*



SEVEN-ROOM HOUSE—TYPE S-1

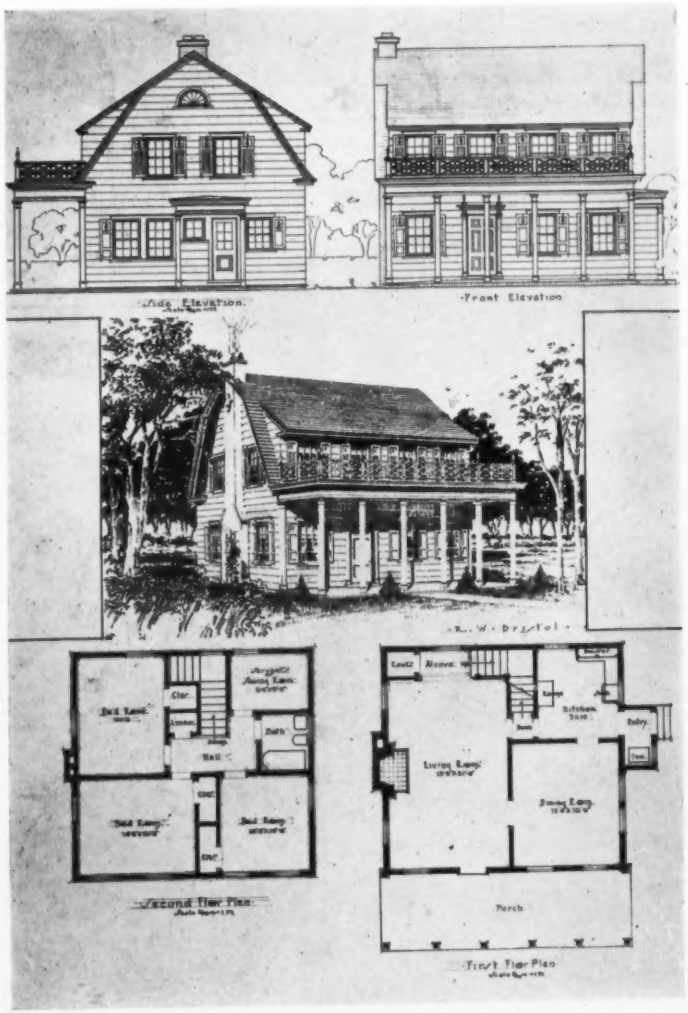
MOTT B. SCHMIDT, *ARCHITECT*

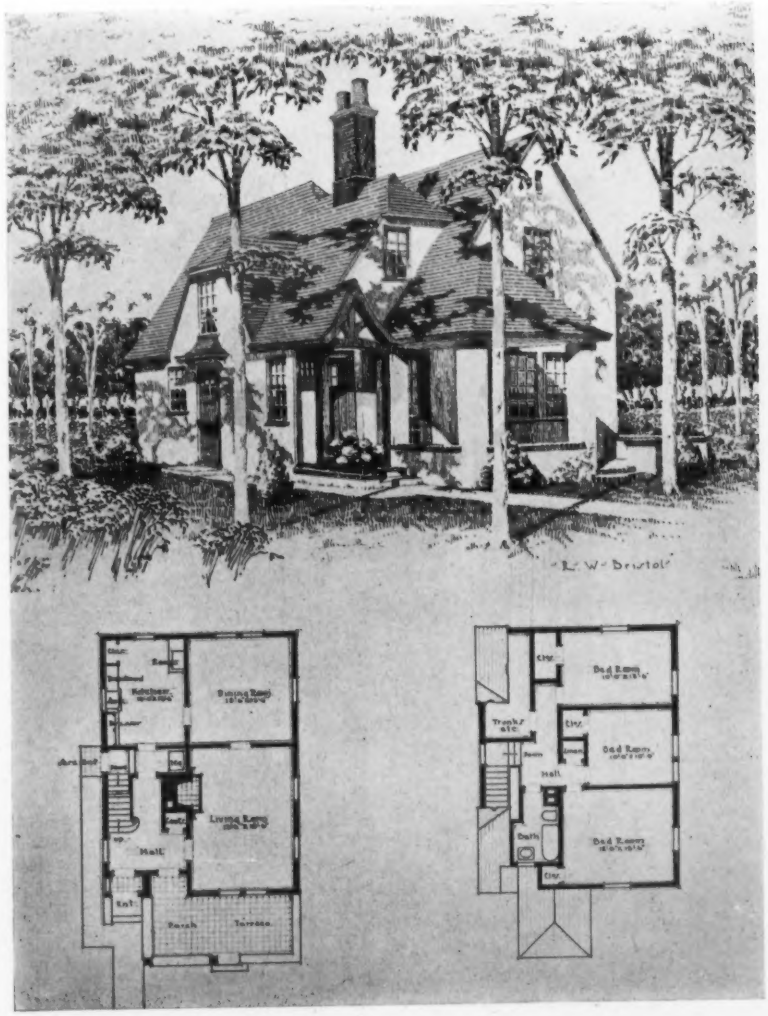


FLOOR PLANS, TYPES S 2 AND 3
MOTT B. SCHMIDT, *ARCHITECT*

TWO VARIATIONS OF TYPE S
MOTT B. SCHMIDT, *ARCHITECT*

VARIATION OF THE TYPE G, SIX-ROOM HOUSE
GEORGE GILBERT, *ARCHITECT*



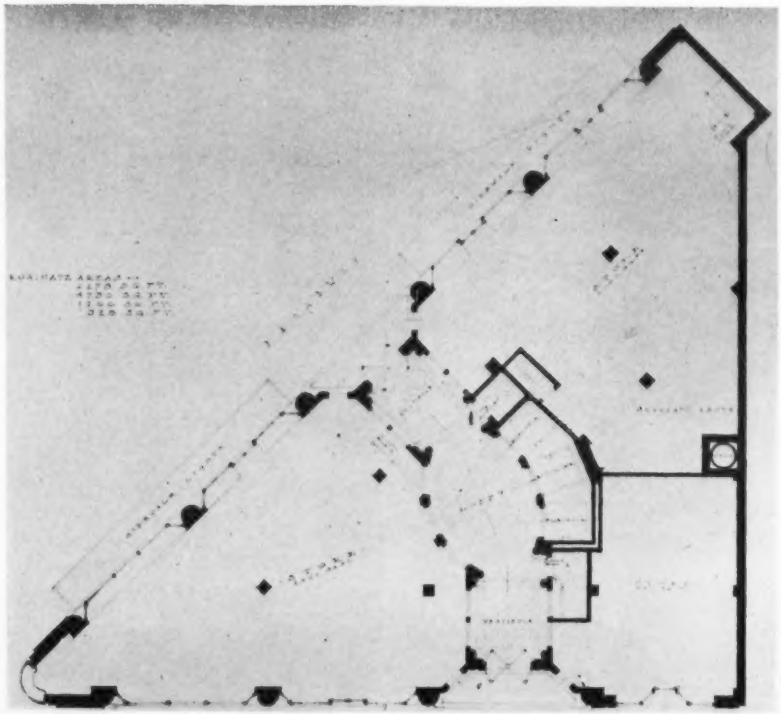


TYPES OF HOUSES AT GARDEN CITY, LONG ISLAND, N. Y.
R. W. BRISTOL, *ARCHITECT*

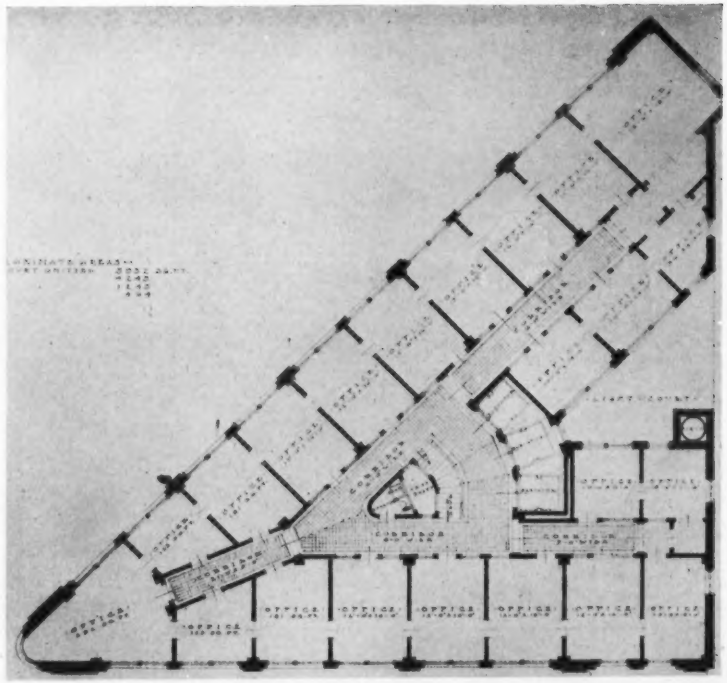
A SIX-ROOM TYPE OF HOUSE AT GARDEN CITY, LONG ISLAND, N. Y.

R. W. BRISTOL, *ARCHITECT*

JAMES H. BROWN BUILDING, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*



FIRST FLOOR PLAN



TYPICAL FLOOR PLAN

JAMES H. BROWN BUILDING, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*

DETAIL OF UPPER STORIES OF JAMES H. BROWN BUILDING, DENVER, COLORADO
J. B. BENEDICT, *ARCHITECT*

Current News

Happenings and Comments in the Fields of Architecture and the Allied Arts

New York Society of Architects

An important and numerously attended meeting of the New York Society of Architects was held at the Society's headquarters, the Engineering Societies' Building, West 39th street, President James Reilly Gorden in the chair, on April 21.

Revision of the Architects' Registration Law was discussed at length, attention being called to the proposed change abolishing the title of Registered Architect and substituting for it that of plain Architect. Also the requirement of an affidavit from an applicant for a certificate, claiming that he had been in practice prior to the passage of the act.

Much interest was shown in the matter of proposed Junior League affiliated with the Society.

As bearing upon this question, Mr. McCarthy referred in strong terms to the practice of some so-called architects—stigmatized by the speaker as "pikers"—who, rather than stand for a legitimate price for their work, are willing to accept a merely nominal fee, regardless of professional dignity or ethical obligation. He coupled with these men certain officials of the Building Bureau, who act as intermediaries between speculators and practitioners of the class referred to. Mr. Henry Holder was appointed the Society's delegate to the Brooklyn Superintendent of Buildings to make inquiry into this matter.

Secretary Frederick Zobel gave utterance to strong feeling—which was largely shared by members present—as to the numerous bills before the Legislature tending to restrict building operations, and urged the importance of sending a protest to the Governor, asking him to veto all such measures.

England's Unemployment Insurance Bill

The Bankers' Trust Company has received from its London correspondent complete details of the new Government Unemployment Insurance Bill, by which it is proposed to give out-of-work protection to almost the entire employed population of the United Kingdom between the ages of 16 and 70 years.

The new bill is to supplant the present British unemployment insurance plan which applies to about one-quarter of the workers (3,500,000 persons) and pays out-of-work benefits of 11s. a week. Under the plan now before Parliament the benefits are to be increased to 15s. a week to men and 12s. to women. Workers between 16 and 18 years of age will receive less than adult persons in case of unemployment.

More than 11,700,000 workers will be immediately eligible to insurance under the proposed plan. Agricultural and domestic services are excepted employments and in Ireland only workers insured under the present plan are to be eligible. But means are to be provided whereby the Minister of Labor may bring excepted industries under the new plan.

The bill provides the following method of financing the insurance: Male workers will each contribute 3d. per week and their employers will contribute 3d. per week for each man employed. The rate paid by female workers will be 2½d. per week and an equal amount from employers. Lower rates will be collected for workers between 16 and 18 years of age. The Government will contribute a sum equal to one-third the total amount collected from workers and employers.

It is estimated that the Government's contribution will be about $15,000,000 a year. The cost to the Government of the present insurance has been about $6,250,000 a year. This Government assistance and the collections from workers and employers accumulated a reserve under the old plan which permitted of the benefits being recently increased from 7s. to 11s. pr week.

Industries will be permitted to set up special schemes of their own provided they give equal or superior advantages to the new Government plan, and a state grant will be made to these special plans. But it will not be in excess of one-tenth the estimated amount of the total contributions which would be paid by these employers and employes under the general scheme. It is calculated that about 3,800,000 workers, or about one-third of the total number insurable, may place their insurance in special schemes of the various industries.

Principal conditions that will apply to the payment of benefits are:

Benefits not payable until at least twelve contributions have been paid and until at least six months have elapsed since first contribution was paid.

Amount of benefits that may be drawn limited to one week's benefits for every six contributions paid.

Applicants must be capable of, and available for, work but unable to obtain suitable employment, and must give proof of unemployment by daily attendance at appropriate reporting places.

Times Square

To many good Americans the hundred blocks or so bounded by Twenty-eighth and Forty-eighth Streets, and by Eighth and Park Avenues, in New York, form the center of the universe, declares the *Survey*. For, this is the center of theatreland and, incidentally, also the hotel center of the metropolis. A survey undertaken by the metropolitan area committee of the Interchurch World Movement brought out the fact that every minute three temporary dwellers enter and leave this area, accommodated in ninety hotels, seventeen clubs and 493 boarding and rooming houses. Only some 5,000 families live in the area; but its forty-five theatres and ten moving picture houses hold 78,000 persons and have an average weekly attendance of nearly a million.

The World's Most Perfect Carillon

The world's most perfect carillon is claimed by the Roman Catholic Cathedral of St. Colman, at Queenstown, Ireland, of which Pugin & Ashlin were the architects. It has just been dedicated. A special feature of the ceremonies of dedication was the inauguration of the carillon, on which recitals were given by M. Nauwelaerts, the city carillonneur of Bruges. The carillon of 42 bells, with clavier, compass 3½ octaves chromatic, is considered to be the largest and finest in the United Kingdom, and the most perfect set of bells in the world tuned to equal temperament. The founders are Messrs. John and Denison Taylor of Loughborough. The carillon was designed by and erected under the supervision of Mr. W. W. Starmer, the expert in bells. The great bell weighs 6,775 pounds, and the smallest only thirteen pounds, the total weight of the 42 bells being seventeen tons.

Archæologists Excavate Palace of Edward the Confessor

Not in many years has any discovery so interested English antiquarians as the recent finds in Windsor Park during excavations made by Captain Vaughan Williams to try to locate a palace supposed to have been built there by King Edward the Confessor. American antiquarians also are evincing much interest in the discoveries.

Just before the war Captain Williams got permission to excavate. Following the trail of an old Roman road he had located, he came to the park wall, near Bear's Rail. There he found the outlines of two moats of distinctly Roman character. Later he found bits of Roman tiles scratched up by rabbits. The war ended his work.

This past summer he resumed it and his digging has resulted in one of the most remarkable antiquarian discoveries ever made in Great Britain. He had hardly scratched the surface before he brought to light stones similar to those of Windsor Castle, but uncut, rougher and much older.

King George visited the excavations. Then the Berkshire Archaeological Society did so and money was raised to continue the work.

At the present time the excavation has revealed two square moats (outer and inner) inclosing buildings, the whole covering two acres. A complete Saxon kitchen of perfect descriptions, with two hearths thirteen feet square and central passage about eighteen inches wide, were unearthed. These hearths were used for basting two oxen. Both are in a fine state of preservation.

The kitchen adjoined a large H-shaped building thought to have been the palace of Edward the Confessor, which covered most of the ground within the two-acre inclosure. On the right was a buttery and a small porch at the back and a large porch leading on to the courtyard.

A little chapel was then discovered, inside which is an altar eight feet by two.

Here was another most interesting find—a hearth with a channel, evidently ancient Saxon. Many eminent antiquarians believe this to be a pagan sacrificial altar. In the same chapel was found a Christian altar. In Bede's "Chronicles" reference is made to King Redwald of the East Saxons having two altars, one pagan and the other Christian.

While there is yet no direct proof that Edward the Confessor occupied a palace in Windsor Park, Captain Williams believes that he chose the place because it is 400 yards from a hot sulphur spring and that the Confessor's healing miracles probably were connected with the curative properties of the sulphur springs.

Interest in Captain Williams' excavations has been heightened by the discovery that Edward the Confessor's palace is above a building of the Roman era. He has obtained pieces of Roman terra cotta tiles during the digging.

Tyrannical Unionism and Industrial Arts

The industrial arts, cherished so sincerely by our forefathers, have faded from existence, or so states the Seattle *Star*. The tradesman no longer injects touches of art into his handicraft. He turns out goods that are practical, but absolutely void of imagination, and which are undistinguishable from the thousands of others that his fellow worker turns out. This prevalent condition, according to a number of critics, is due to the many inventions which take the place of men in factories, also to the world's cry for practicability in its heedless race to forge ahead.

It is very true that the installation of machines in factories has obviated hand-work in manufacturing articles, and that the necessity for speed tends to kill industrial art, but these things alone cannot be blamed for the decay and downfall of the industrial arts. The worker who manufactures an article with the use of a machine has practically as great an opportunity, if not more, to use his imagination and skill as the man who fashioned the same article centuries ago with a knife or some other crude instrument. He can add touches to it that would brand it as his own and in some cases increase the value considerably, but—does he do it? No.

Tyrannical unionism has killed the last spark of ambition in the worker of today. Unions have slowly built around themselves a barricade of laws which govern not only the laborer but also the employer. They dictate in such a manner that the man employed in a union shop has nothing to fear from his employer as long as he does some work and is in good standing with his local. They hire a man with the understanding that he must conform with the laws of the organization and that he must not scab on another craftsman by doing any of his work or using his tools. Not only that, they regulate wages and a thousand and one other things. Naturally the laborer has no occasion to please any one except his union officials. His initiative is destroyed and in this there is no greater enemy to industrial arts than tyrannical unionism.

The Indian as an Artist

The bureau of American ethnology has just issued a fully illustrated article, entitled "Designs on Prehistoric Hopi Pottery," by J. Walter Fewkes. The book is intended as an aid or rather incentive to the study of aboriginal art, and an appreciation of the American Indian as an artist. Although primarily for art schools where decorative motives are studied, it might likewise be of value in public schools or wherever attention is given to designs that are purely American in origin. Our moccasined Americans have a wealth of suggestions to make to those of us who have long lived under a higher civilization.

There is an ever-increasing demand for a distinctive American art which is being met in various ways by our museums. Many decorative motives are found in the

rich symbolism found on prehistoric Indian pottery, before it was modified by white influence. Some of these designs still survive among the living Indians, but a much greater and less adulterated form persists in prehistoric bowls and vases brought to light by the spade of the archeologist.

Probably the most famous of all the survivals of a prehistoric religion among the aborigines of the United States is the celebrated snake dance performed biannually among the Indians called the Hopi, who live some seventy miles east of the Grand Canyon of the Colorado. In this ceremony the participants in the dance carry live reptiles; but this startling ceremony is only one of the interesting things about these people.

They are wonderful potters; and the schools or wherever attention is given particular interest about this pottery is its complicated symbolism connected with their religious ceremonies. An analysis of this symbolism shows that the favorite natural object represented in it is the bird and the feather. In the many modifications that exist of this symbol, the majority are so far removed from realistic representations that it is extremely difficult to detect and interpret the figures. This could only be done by one who is as familiar with the subject as the author, who has spent many years in studying the surviving rites of this interesting people. So far as geometric decoration goes, with the exception of the egg and dart pattern, there is no design known to Greek or classic nations which was not independently discovered in America and used by this people. We find also the sun and earth also depicted with various animals, one of the most important of which is the mythic serpent with plumes. The specimens considered in this article are on exhibit in the United States National Museum and would well repay an examination by all students of American symbolism.

Dearth of Office Buildings in London

Owing in part to the commandeering by the British Government during the war of numerous buildings previously occupied by business firms for the purpose of accommodating war staffs, and still more to the total cessation of building operations, there is now an acute dearth of office accommodation in London, states Alfred Nutting of the American Consulate General, London.

Buildings which were in course of erection in 1914 and 1915 were completely abandoned, derricks, cranes and other machinery dismantled, and the partly built edifices left untouched.

Since the armistice operations have been resumed on these buildings, but the accommodation provided therein had been leased long ago in anticipation of early completion, and consequently the fact that such offices have become available has not tended to ease the incessant demand. With the active resumption of trade, foreign and domestic, and its ever-widening extension, new firms and corporations find an almost insurmountable difficulty in securing location in which business can be transacted.

Recently it was stated that a proposal had been considered to extend the boundaries of the "city" of London on its northern side so as to take in some of the open spaces or unused land for the purpose of providing office buildings, but whether or not this suggestion will develop into accomplishment is for the future to answer.

Meantime, temporary wooden huts and buildings erected by the Government in squares and other open spaces in and near the "city" during the war are reported to be eagerly leased by business men and firms at rentals of £220 ($1,070) per annum, a sum that formerly was sufficient to secure conveniently fitted accommodations of a more or less commodious character in substantial stone and brick buildings.

Memorial Trees to Be Planted on Arbor Day

That every school in New York State plant on Arbor Day of 1920 a memorial tree for every former student who died in army service is the Arbor Day suggestion of the New York State College of Forestry at Syracuse.

In order to assist in this living memorial, the College of Forestry will give assistance and advice, and will also secure for each such tree a properly marked metal tablet in the form of a shield from the American Forestry Association, which will register the memorial and add the tree to its honor roll of the nation's soldier dead.

One method of celebrating Arbor Day would be the planting, if there are enough soldiers to be thus remembered, of a row of memorial trees to make a memorial roadway from the school building to the street, or to make a shaded street in front of the building.

The New York State College of Forestry, while it trains students for the forestry profession, also has another mission, and that is to take to the State assistance in developing forest areas, and particularly in inspiring children with the idea of the value of the tree to the State. For school ground development it has on its extension staff a landscape forester as a specialist in such work.

The college believes that public schools should be beautified with proper shade trees, just as the farmer should be assisted to get a tree crop, and a future income from land not adapted to farm crops, and the Arbor Day suggestion is to foster the idea of growing trees as well as to provide a real living memorial for the soldier dead.

The college itself plans the same memorial to its soldier dead, for it lost twelve men in action, after sending 300 of its boys to front line trenches or training camps.

Children and Apartment Houses

The owners of apartment houses in San Francisco, as the result of a month's campaign directed against them by several civic organizations, have changed their ruling with regard to children. During the campaign the accusation was made that the average apartment house owner would not, under any circumstances or conditions, permit small children to live in their apartments. To meet this condition, a special meeting of the civic organizations and the apartment house owners was held, at which the apartment house owners agreed to take in children, provided that persons who have children sign an agreement to pay for any damage inflicted to the furniture, furnishings and general equipment of the apartment by their children during their tenancy.

Such a contract system might be followed by apartment house owners in other cities, where a similar campaign has been started by ministers, judges and others to give the apartment house business a bad name as a destroyer of family life. The apartment house owner should adapt himself to present conditions, and as houses are now scarce, he will have no trouble in filling apartments left vacant by those who object to children.

Important "Home Building" Bill in Congress

The provisions of the Calder Bill (No. 2492 in the Senate and No. 7597 in the House of Representatives), which is now pending in Congress, bear much the same relation to the owning and building of homes that the Federal Farm Loan act bears to the financing of farming operations. The support of home building programs in cities and towns is considered of equally vital importance. It is an Americanization issue to develop a larger home owning class among the workers of the country and to strengthen loyal citizenship thereby. Its aim is fundamentally sound and of great importance. Its collateral advantage in aiding the building industry for a long term of years is likewise of much importance.

To Supply Books for All

Extension of library service to 60,000,000 persons in the United States who have inadequate opportunities of obtaining good reading matter, is the principal aim of the "Books for Everybody" movement of the American Library Association now under way in every State in the Union.

Encouragement of technical libraries in industries, of more books for the blind in the standard Braille type, and the expansion of the country library system, are other phases of the movement on which stress is laid. Greater and more flexible service to the merchant marine coast guard stations and lighthouses; translation of the best books about America into foreign tongues for the benefit of 15,000,000 new Americans, financing of libraries and service to ex-soldiers, sailors and marines in hospitals of the United States Public Health Service—these are projects put under way by the association in its broad program.

Opportunities for self-instruction in all lines of human endeavor and a broader general knowledge through reading and study courses to be prepared under the direction of skilled librarians are available under the "Books for Everybody" movement. It is a program of better citizenship through universal adult education. To carry out the work of the association for the next three years a fund of $2,000,000 will be obtained, not through an intensive drive, but by individual efforts of librarians, library trustees and friends of libraries.

Chicago Women Urge Federal Bureau of Housing

"We favor the creation of a Federal Bureau of Housing and Living Conditions with sufficient funds to enable it to investigate housing and living conditions throughout the country and to conduct research and experimentation with a view to the inauguration of a constructive housing program," is one of the "planks" put into writing by the public-spirited and influential Woman's City Club of Chicago and advocated in connection with the coming presidential campaign. They contend that the United States has spent large sums of money in the promotion of scientific farming, the care of cattle, sheep and bees, in the development of commerce and manufacturing, but except for the housing of shipbuilders and munition workers during the war, the United States Government has taken no cognizance of the problem of housing its citizens. The United States Housing Corporation and the Transportation and Housing Division of the Emergency Fleet Corporation investigated the housing and living conditions of more than 200 cities and towns and invested more than $110,000,000 in housing projects. The designing, constructing, operating and disposing of these houses should set new standards for the nation, these patriotic women contend, adding that this work represents our greatest salvage from the war.

Permanent Exposition Building for Furniture Trade

The first permanent exhibition building for furniture manufacturers east of the Mississippi will soon be erected in New York near the Pennsylvania Station, according to a statement by R. Braun, president of the New York Furniture Exchange Association, Inc. The building, said Mr. Braun, will be twelve stories high and have 150,000 square feet of exhibition floor space. It will cost approximately $900,000 and will occupy a plot 150 by 100 feet. It will be of interest to architects to know that they may see the representative work of manufacturers throughout the country assembled within one building where they are conveniently grouped.

Holland Buys Art

Holland, immune during five years of warfare from the expenses which devolved on the belligerent nations, has been amassing wealth such as she never knew before. Her people are regarded by *Arts and Decoration* as very close competitors of ours in the matter of obtaining art treasures. She has awakened to the fact that a remarkably good investment would very likely be represented by the repurchase of her own art works, even at the high prices now placed upon them. So Dutch buyers, it is said, thronged English salesrooms during the whole of the war. Whether they have been acquired in order to keep their treasures, or to pass them along to other continental collectors has not yet been learned.

According to *The Star*, as many as 10,000 pictures have left Britain for Holland, some bought by Dutch dealers and others taken over to Holland by our own firms, and sold for sums largely in excess of those fetched here. As a rule, the Hollander does not give high prices; he buys thriftily, not sensationally. Knowing the points in his own school of painting, he buys with discernment, but his steady acquisition of pictures has had the effect of sending prices up. It may be that before long we shall be buying back the same works at greatly enhanced figures.

Museum of Art Treasures Discovered in Poor House

A veritable museum of art treasures has been discovered among old furniture in a home for the poor in Seville, Spain. Valuable paintings and sculptures of the most celebrated artists of the sixteenth century, including paintings by Zurbaran, Roclas and Pacheco are among the treasures unearthed. There is one picture four meters high signed by Guido Rein and another by Valdeslaeal, and a piece of sculpture by Ramos. The picture of Guido Reni alone is valued at more than 2,000,000 pesetas. It develops that the Valdeslaeal painting was bought some twenty-five years ago for five pesetas, its owner believing it of no value.

Impressions of Sweden

Stockholm, as everybody knows, is one of the cleanest and brightest of capitals. So is Helsingfors, just across the Gulf in Finland. Helsingfors might give lessons in the municipal amenities to almost any American city, although it is tucked away in the north, in a bare little land of rock and lakes and birch trees, in the latitude of the southern end of Greenland. Describing conditions in Sweden, Arthur Ruhl, in the *Outlook*, states:

I do not happen to know of any American city so consistently clean and well built. They post no bills in Helsingfors. They tie them around posts with strings, and when they have served their purpose they disappear, strings and all. Every morning there is a market on the broad quay at the end of the Esplanade; fish, flowers, meat and vegetables—even Oregon apples, which contrive, in spite of distance and almost prohibitive rates of exchange, to cross the sixtieth parallel. A few minutes after noon you would never know a market had been there. Stalls fold up, rubbish disappears, street cleaners turn on the hose and presently the quay is as clean as a tennis court.

The Helsingfors gas tanks are not the dismal contraptions that disfigure most of our water-fronts. The tank itself may be the same, but they build a neat brick house for it—a sort of monumental roundhouse, with stone wreaths around the top by way of frieze, quite in place among buildings intended for politer uses, and not without some suggestion of the Castle of St. Angelo in Rome.

The Swedes, like most northern peoples, are inclined to be hard drinkers. That is to say, they consume a good deal of alcohol, and their favorite drinks are "hard" drinks—brandy, schnapps, arrack punch—rather than the wine of south or the beer of middle Europe. I had heard "alcohol," "drink," and the "saloon" spoken of as if they were interchangeable terms, and people talk of doing away with the saloon (the Swedes did away with it years ago) as if the only way to do away with it were to do away with alcohol. I was accustomed to more or less vituperative remarks on one side or the other, but not to a calm and, as it were, scientific consideration of the subject, as if it were something quite respectable and worth the careful study of the same sort of citizens as those who plan park systems or build model tenements.

The Clothing Workers' House in New York

The first home of the New York Historical Society is to be torn down to make room for the first home of the New York branch of the Amalgamated Clothing Workers of America, reports the *Survey*. The Historical Society building was erected in 1855 at the corner of Second Avenue and Eleventh Street, Manhattan, which was then the centre of fashionable life in the city. The ground is peculiarly associated with Knickerbocker tradition. It was part of the farm which Governor Peter Stuyvesant purchased in 1647, and which later became a Dutch village called Stuyvesant or Bowery Village. Just across the street is the church, St. Mark's-in-the-Bouwerie, where Governor Stuyvesant is buried. The Historical Society itself is closely associated with illustrious names of old New York, for among its founders and early presidents were Peter Gerard Stuyvesant, DeWitt Clinton, Gouverneur Morris and Albert Gallatin.

Now the genteel days of Second Avenue are forever past. The tenements have closed in upon it. Stately old residences are replaced by moving picture houses, and throngs of working people fill the walls where fashionable promenaders took the air. And across from historic St. Mark's is to rise a building which, instead of housing the archives of the past, will be devoted to the use and enjoyment of the workers who have made this district their own. The men associated with the new enterprise—such men as Sidney Hillman and Joseph Schlossberg of the Amalgamated Clothing Workers—are likely to mean as much to the New York of the future as did the founders of the Historical Society to the New York of the past.

The new Amalgamated Temple will be unique among labor buildings. It is intended to be the centre, not only of the business activities of the union, but of recreation and education for New York's 50,000 workers in the men's clothing industry. It will contain the offices of business agents, trade managers and other union officials, and a large room for executive board meetings. The financial department, where the members pay their dues, will take up a large part of one floor. Another floor will be devoted mostly to shop meeting rooms. There will be an assembly hall seating 2,500. In the basement there will be a large recreation room and gymnasium and a restaurant. The top floor will be a sun parlor of glass and steel, which will seat almost as many people as the assembly hall. On every floor a considerable amount of space, in a wing, is devoted to class rooms, of which there will be twenty in all, and there will be a library for the use of the students. Educational work is considered by the builders to be the most important of the uses to which the building will be put.

The temple will cost $600,000. The money is being raised by levies of one day's pay upon the New York clothing workers. The architects are G. A. and H. Boehm.

House Boats and High Rents

A writer in a recent issue of *Outlook* wants to know "Why not build you a houseboat and laugh at high rents?"

In the Orient, he says, hundreds of thousands of people live on boats. They are born, live and die afloat. Spend an afternoon on the bridges spanning Tokyo's many canals, and you will find whole families living on the clumsy cargo boats or less unwieldy sampans which are poled up and down the odoriferous waterways of Japan's capital. Cruise along the Inland Sea, and then go up and down the China coast. In both places you will find clumsy-looking but seaworthy junks which are the lifetime abode of the men, women and children who manage them. With the human beings dogs and cats—yes, and ducks and chickens—live in complete contentment.

Necessity is the mother of invention and the father of imitation. Under the pressure of high rents may not Americans imitate Orientals and build their homes on the sea, or at least on bays and rivers Why not? It is already being done. In New York City, where the demands of landlords have been especially exorbitant of late, a small colony of houseboat dwellers has grown up on the Harlem River. Some of these craft are surrounded by water only at high tide and hase small gardens adjacent to their front doors (if landlubber phraseology may be applied to such an almost amphibious institution as a houseboat). Others are afloat all the time. Many of them have such conveniences as electric light, running water, tiled baths, etc. And with the help of a small skiff or a long gangplank they are within a few minutes' walk of subway or trolley. Yet the rent of this sort of home, we are told, is but five or ten dollars a month.

Why not build you a houseboat and laugh at high rents?

Character of Immigration To-day

Quoting a statement sent out by the Inter-Racial Council, the bulletin of the Guarantee Trust Company of New York declares that there is nothing of hope for the general industries of the country in the character of the immigrants now coming into the country. It is stated that "the majority of immigrants coming in now are women and children, mostly coming to join husbands and fathers, and that there are practically no immigrants coming in from whom we can recruit unskilled labor. The races that predominate are Greeks, Syrians, Italians and Spaniards. Most of the men coming in have lived here before. The women who come in are not of the domestic servant class. If they engage in work at all, it will be in canneries, boot and textile factories. Those who have come in express no predilection for domestic service. In announcing a conference of representatives of industry, finance and agriculture on the immigration problem an officer of the Council said:

"Immigration before the war and after the war are two entirely different propositions. They are so different that America is 4,000,000 men short as a result of the dwindling of immigration. Thousands of immigrants are going back."

Melted Snow Harms Roads

Highway authorities state that even though there were no traffic to use the highways of America during the winter months, the clearance of snow from the roadbeds would more than be justified. In the movement now country wide, to keep the roads clear of snow, and thus make them available for the great amount of hauling by motor trucks, every effort is being made to interest States, counties, cities and towns, and the farmers, in the work. Melted snow softens the roadbed. The base under the wearing surface is loosened. Much damage is done. Every driver of a motor truck or passenger car has noted the effects of winter on the highways. Traffic will break its way through on the uncleared road. The movement now on to bring about the clearance of the roadways so as not to impede motor truck hauling, will aid in conserving roads as nothing else could do. When this is brought home to the authorities and to farmers, their assistance to the great movement will be given willingly. On roads made soft by melting snow ruts form, and results are disastrous. Much of the larger percentage of road repair work is due to winter traffic through neglect of highways during snow time. Demands of the times are such that clearance of the roadways will be more general now than formerly, for the country needs the work of every available truck.

Book Note

"LANDSCAPE ARCHITECTURE: A COMPREHENSIVE CLASSIFICATION SCHEME FOR BOOKS, PLANS, PHOTOGRAPHS, NOTES AND OTHER COLLECTED MATERIAL." BY PROFESSOR HENRY VINCENT HUBBARD, OF HARVARD UNIVERSITY, AND MISS THEODORA KIMBALL, LIBRARIAN OF THE SCHOOL OF LANDSCAPE ARCHITECTURE OF HARVARD UNIVERSITY. PUBLISHED BY THE HARVARD UNIVERSITY PRESS, CAMBRIDGE, MASSACHUSETTS.

This pamphlet is of the same size and organized in the same general way as the City Planning classification published by Professor J. S. Pray and Miss Kimball in 1913. There are enough libraries and practitioners in the field of landscape architecture to make this present classification most valuable, and it is fortunate that the experience of the School of Landscape Architecture at Harvard is thus put at the disposal of the public.

Such a comprehensively planned and carefully developed outline of the landscape architect's field should be of serviceable interest to those in the adjoining profession who are meeting the difficult problem of developing a scheme for the arrangement of the complicated material which must needs be readily available in all architects' offices.

News From Various Sources

The first results of the 1920 census give Cincinnati a population of 401,158, an increase of 37,567, or 10.3 per cent over 1910, and Washington 437,414, an increase of 106,345, or 32.1 per cent over 1910.

* * *

In the year preceding the war (1913), our exportation of manufactures amounted to $1,117,000,000, and in 1919, the first full peace year following the war, $3,486,000,000, or three times as much in value in 1919 as in 1913.

* * *

The Federal Trade Commission is to be given authority to accept and administer inventions and patent-rights developed by Government employes without charge to them. A bill with these provisions has passed the Senate and been referred to the House Committee on Patents.

* * *

The Senate adopted a committee amendment to the Post-office Appropriation Bill providing for a transcontinental air mail route between New York and San Francisco by way of Chicago and Omaha and passed the bill, carrying a total of $462,000,000.

* * *

The record of testimony before the Senate Committee on Public Lands in the support of the Jones-Reavis bill to establish a National Department of Public Works has been printed and a limited number is available for distribution. Applications for copies may conveniently be sent to the Washington office of Engineering Council, address as above.

* * *

In 1918 there were 379,438,072 passengers on the London tubes and underground railroads, 652,562,327 on the omnibuses, and 198,334,499 on the street cars, a total of 1,230-334,898. Including Sundays this works out at an average of 3,370,780 passengers a day. It is expected the 1919 totals will be considerably higher.

* * *

The Bureau of American Ethnology of the Smithsonian Institute announces issuance of a fully illustrated article entitled, "Designs on Prehistoric Hopi Pottery," by J. Walter Fewkes. The book is intended as an aid to study of aboriginal art, and the Institution considers it might be of value in public schools, or wherever attention is given to designs that are purely American in origin.

* * *

The draft boards in the United States enrolled the names of nearly 24,000,000 men. When the armistice was signed, November 11, 1918, there were about three and one-half million men in the military service of the United States, of whom 2,758,542 were furnished by the selective draft. Had the war continued, Class 1 alone would have contributed an additional 3,630,106 from the registrations qualified for general military service.

Weekly Review of Construction Field

Comment on General Conditions of Economics With Reports of Special Correspondents in Prominent Regional Centers

PRODUCTION is improving slightly, if at all. The railroad tie-up has been so wide in its effect, so cumulative of disadvantages to all industry, that its full cost cannot yet be felt or foreseen. "It is heart-rending," said one manufacturer. "Our railroad sidings are full of material waiting to be moved and the builders are without the supplies. When it will be moved no one knows." It is discouraging, there is no doubt about it.

"The proverbial impracticability of making bricks without straw is not a whit less feasible than constructing buildings without cement, lime or steel," says the New York Sun in a review of the local building conditions. "Just as the termination of the bricklayers' strike and the advent of spring weather had given promise that something like a beginning might be made toward solving the problem of new construction, scores of building enterprises have come to a dead halt and the whole structure of the building industry is menaced."

The secretary of the Building Trades Employers' Association says: "It is impossible to get anything like adequate quantities of the first essentials of building operations and we cannot get any definite assurances from the railroads concerning the prospect of better conditions. All kinds of materials are scarce because of the freight embargoes imposed in consequence of the strike tie-up. Some builders have been drawing upon limited quantities of material by bringing it in by means of motor trucks, but that is expensive and the supplies are meager."

One of the largest contractors says that out of 1400 men he has just laid off 1200. He has thirty-two jobs under way, but is without cement, and his steel and lumber are held up somewhere on the road.

The Guaranty Trust Company looks upon the results of the railroad strike as an evidence of the small margin on which the business of the country is being done. It estimates that a million men were thrown out of work. "The significant fact," it says, "is that there were apparently no reserves on hand which would have enabled production enterprises to bridge over the interval of disturbance." And in this situation it finds "another illustration of the primary obligations resting upon the country to produce more of the essential things." Protests are appearing with greater frequency against the continuance of those enterprises which minister to the comparatively small proportion of the population whom the war has enabled to indulge themselves in reckless expenditures and in favor of those which will put the country's business on something better than a hand-to-mouth basis.

From Chicago we hear of another deterrent to building in the increase of wages in some twenty crafts of from $1 to $1.25 an hour. These increases in pay, it is said, have reduced the building activities in Chicago by at least one-half.

In New York all building trades craftsmen have been granted an increase of one dollar a day, effective May 1. Unfortunately, because of the shortage of materials induced by the railroad strike, many of these men are being laid off and the increase will not get them very far just at present.

The railroads of the East have presented a statement of their case to the Interstate Commerce Commission which asks for increase of rates to an average of about 28 per cent. It is claimed by them that their increase in revenues since 1916 has been 36 per cent, while the increase in costs has been 99 per cent.

It is everywhere the same story. And always the demands for more money arouse a sympathetic interest. We all have experienced the cheapening of the dollar. We all know that the expense of living has gone up, and continually goes up. We know that the railroads need much more money to "carry on" and that their "carrying on" is essential to our commercial development. It is undoubtedly essential to our general welfare that they should have it.

We all of us sympathize with all the people who want more money to meet their living expenses. We are sorry for them. But the people who have our admiration are those who keep straight at work. There are contractors who have completed contracts and lost money by it. There are manufacturers that have not advanced prices and yet push their plants to the utmost to meet demands. There are dealers who are not profiteering but sharing in the absorption of increases. These are the people who are going to pull us through. And in all the discouraging phases of the present time the dynamic qualities of such businessmen stand out. It may be that they will get their reward in heaven; but the general opinion seems to be that they won't have to wait that long. Certainly their attitude will inspire loyalty in all their clients and their brave stability will be one rallying point for all that is disorganized in industry.

(By Special Correspondence to THE AMERICAN ARCHITECT)

CHICAGO:—Chicago is facing a possible complete cessation of building activities in the near future, as the result of the shutting off of building loans by the banks.

The tightening of credit to the building industry has been noted for the past six weeks and has recently culminated in the refusal of further real estate or building loans. Tightness of money, inflation of real estate values and an already over-loaned condition were contributing factors in the decision, according to the banks.

Building has dropped off 30 per cent this month and every day the decline is more noticeable. Builders say that, with bank loans shut off, building in Chicago will soon be at a standstill.

The only building projects under way are those already financed, but even the man with sufficient funds to build is continually hampered by the lack of building materials. Crushed stone, lime, gravel, cement and many other materials are now very difficult to get. Some of the cement companies have established truck service from towns in Indiana to supply trade that cannot be served through rail transportation.

Shortages of raw material and labor continue to hinder in all lines. Railroads claim a 90 per cent resumption of freight traffic, but manufacturers declare it to be almost impossible to secure raw material, and as a consequence

many factories are closing and industries already closed give no sign of resuming operation.

In many instances the curtailment of shipping and manufacture has caused advance in price, but there has been shown a disposition on the part of some of the industries, especially in the construction field, to allow prices to remain at the present level, preferring to absorb the added cost of operating, rather than pass it on to the "ultimate consumer."

The sincerity of the movement to curb high prices of building materials is indicated in the action taken recently by the lumber interests in the district around Chicago. Lumbermen, it is reported, have agreed to absorb the 25 per cent increase in wages granted to some of the construction trades after May 1, rather than have the contractor add it to the cost of construction.

Leading construction men of the country who were called here in conference by the Associated General Contractors of America, for the purpose of "getting to the bottom" of prevailing conditions, have appointed a committee to investigate the high cost of construction material and—if conditions warrant—to request the aid of the Federal Trade Commission. W. A. Rogers, of Chicago, president of the Associated General Contractors of America, said: "the leading construction firms of the country have come to the conclusion that the contractors should no longer 'pass the buck' to the consumer, and therefore must take determined action."

(By Special Correspondence to THE AMERICAN ARCHITECT)

SEATTLE:—Almost without exception jobbers of building material in this territory report that small building projects have been abandoned as a result of increasing difficulties of getting inside essentials from the East—including nails, pipe, fittings, vitroware, and metal parts.

Jobbers are showing unconvinced architects and contractors their private telegrams and correspondence from eastern mills to the effect that no more business can be firmed at this time or any in the future so far as they can report at present and prices offered seem to carry no inducement. Orders placed by Seattle jobbers as long ago as September for vitroware have not yet been loaded. After repeated telegrams orders placed 120 days ago are now being loaded at eastern mills. Quotations have remained stationary.

Wall radiation has advanced. Three column 38-inch water radiation is quoted at $47.80 at the warehouse. Jobbers have abandoned all efforts at getting nails from the East and are being supplied with 50 per cent of their requirements from Colorado mills.

Fiscal conditions in Japan are bearish. Large interests there have not paid for steel materials on the docks for some time. Should these conditions prevail it is regarded here as possible that the export demand will ease the domestic situation in time for later summer building projects.

Claybourne, B. C., fire brick has advanced $10 to $77.50, which brings it into direct competition with Troy, Idaho, brick, which jobbers are delivering on the job at $70.

Plaster board is out of market, but the supply of wall board is plentiful. Cement is steady at $4.60 per barrel with 80 cents rebate for bags.

Channel iron is unobtainable even for incompleted business buildings and architects have been urged by jobbers to provide a substitute. Experiments are being made with quarter-inch corrugated steel. Metal lath is steady.

Medusa white cement is being used almost exclusively in supplying Seattle, Tacoma, Olympia and Bellingham.

The firm lumber market is $5 lower on upper sizes and $3 down on common, although the mills do not concede any weakness in general tone. They have been advised by wire that transit or unsold cars in the East have been cleaned up as a result of the railroad strike and expect a quick rush for market within the next thirty days. Should the car supply improve, however, to 60 or 80 per cent of normal the market would break.

(By Special Correspondence to THE AMERICAN ARCHITECT)

SAN FRANCISCO:—Deliveries of materials which have been held up by the strike are beginning to be made again, but it may take a month to bring deliveries to a normal condition.

The brick manufacturers are contemplating a raise in prices, but whether this will come immediately or after the inevitable increase in railroad rates is a matter not yet decided. The brick men are trying to avoid two increases in rapid succession and may decide to wait railroad action before advancing prices.

Lime was advanced in price this week and further advances are looked for in this material. In the main there were few changes during the week. One of the most important structures planned for San Francisco is the new Furniture Exchange, on which work will begin as soon as the architect, Kenneth MacDonald, Jr., completes the plans. The building is to be an eight-story concrete structure covering an entire block—bounded by Natoma, New Montgomery and Howard streets—and will cost $700,000.

After a strike of about two months the mill men about the Bay have returned to work. A good many interiors were held up by the strike.

By a decision given recently by Assistant City Superintendent of Buildings Fowler of Seattle, the building code of that city permits the construction of certain classes of buildings in areas outside the second building district which might be termed dangerous structures. If these same buildings were placed in the down-town district they would be regarded as "fire traps," but Mr. Fowler says it is perfectly legal to build them outside the restricted district mentioned.

(By Special Correspondence to THE AMERICAN ARCHITECT)

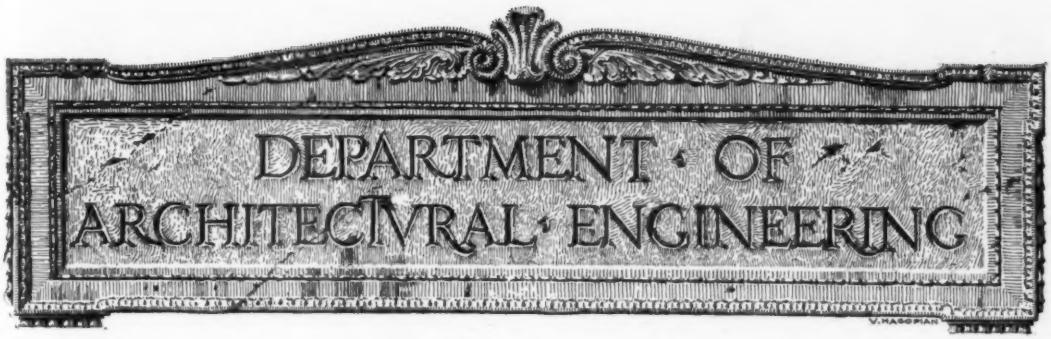
BIRMINGHAM:—Building operations in Birmingham are showing indications of increasing activity as spring advances, being retarded somewhat by the uncertainty of price schedules covering materials.

In many lines there seems to be a stiffening of prices rather than a decline. Iron pipe is in heavy demand with some producers refusing to quote for close deliveries, and others out of the market until they are caught up with present commitments.

The continued bad weather has curtailed lumber production and delayed shipments over a wide territory. Many mills are shut down or running on half-time.

The general apathy permeating all farm labor does not argue for increased activity. Until the country's individual production is intensified and brought to a higher standard in all lines, the strain upon the sources of supply will not be lessened and the great economic problems facing the nation will still remain unsolved.

The housing problem is one which at the moment is presenting unusual difficulties in Birmingham as elsewhere. Much interest is felt in the census report, the announcement of which is daily expected from Washington. It is believed that a substantial increase in population over 1910 will be shown and as a result of the exhibit a more pronounced determination to build necessary houses to take care of the people will develop.



Successful Building in Stucco

VI—Stucco on Concrete Block Walls

THE adaptability of concrete block as a base for stucco is evident. It is true that in many places this material has been tried and later rejected, due to blocks of poor quality, improperly manufactured, having been supplied.

A large number of manufacturers of such products are now using every endeavor to maintain a proper standard of excellence for this material, so that if secured from a reputable manufacturer, blocks of the proper quality can be obtained. At the recent Chicago meeting of such manufacturers the various phases of this subject were discussed to the end that the quality of their product might be improved.

The requirements for, and proper methods of, building with concrete block were fully outlined in the reports presented at the National Conference on Concrete House Construction by the committee and various sub-committees dealing with concrete block houses, and much of the information and recommendations contained in this article is taken from these reports.

Concrete block and tile laid in Portland cement mortar are particularly well adapted to serve as a backing for Portland cement stucco because they are composed of the same class of material as the stucco itself and afford an excellent bonding surface. For Portland cement stucco finish the block or tile should be rough and of coarse texture, but not weak or friable.

In applying stucco to block or tile the joints should be raked out or cut back at least even with the face of the wall; no projections should be left. The wall should be brushed free from all loose particles and wet down and should be moist at the time the stucco is applied; if dry, the moisture is absorbed from the stucco and a weak finish is the result; if too wet, a film of water prevents a proper bond.

Naturally good walls are impossible unless the blocks on which the stucco surface is placed are of proper quality and strength. The standard adopted by the American Concrete Institute is an excellent guide by which to go and is here presented insofar as it relates to the subject of this article.

Extracts From American Concrete Institute Standard No. 10

Ultimate Compressive Strength.—(a) Solid concrete stone, building block and brick. In the case of solid stone, block and brick, the ultimate compressive strength at 28 days must average not less than fifteen hundred (1,500) lb. per sq. in. of gross cross-sectional area of the stone as used in the wall and must not fall below one thousand (1,000) lb. per sq. in. in any test.

(b) Hollow and two-piece building block. The ultimate compressive strength of hollow and two-piece building block at 28 days must average one thousand (1,000) lb. per sq. in. of gross cross-sectional area of the block as used in the wall, and must not fall below seven hundred (700) lb. per sq. in. in any test.

Gross Cross-Sectional Areas.—(a) Solid concrete stone, block and brick. The cross-sectional area shall be considered as the minimum area in compression.

(b) Hollow building block. In the case of hollow building block, the gross cross-sectional area shall be considered as the product of the length by the width of the block. No allowance shall be made for the air space of the block.

(c) Two-piece building block. In the case of two-piece building block, if only one block is tested

A WALL BEING CONSTRUCTED OF THE USUAL TYPE OF CONCRETE BLOCK

at a time, the gross cross-sectional area shall be regarded as the product of the length of the block by one-half of the width of the wall for which the block is intended. If two blocks are tested together, then the gross cross-sectional area shall be regarded as the product of the length of the block by the full width of the wall for which the block is intended.

Absorption.—The absorption at 28 days (being the weight of the water absorbed divided by the weight of the dry sample) must not exceed ten (10) per cent when tested as hereinafter specified.

Limit of Loading.—(a) Hollow walls of concrete building block. The load on any hollow walls of concrete block, including the superimposed weight of the wall, shall not exceed one hundred and sixty-seven (167) lbs. per sq. in. of gross area. If the floor loads are carried on girders or joists resting on cement pilasters filled in place with slush concrete mixed in proportion of one (1) part cement, not to exceed two (2) parts of sand and four (4) parts of gravel or crushed stone, said pilasters may be loaded not to exceed three hundred (300) lb. per sq. in. of gross cross-sectional area.

(b) Solid walls built of architectural stone, block or brick and laid in Portland cement mortar or hollow block walls filled with concrete shall not be loaded to exceed three hundred (300) lb. per sq. in. of gross cross-sectional area.

Girders and Joists. — Wherever girders or joists rest upon walls in such a manner as to cause concentrated loads of over four thousand (4,000) lb. the block supporting the girders or joists must be made solid for at least eight inches from the inside face of the wall except where a suitable bearing plate is provided to distribute the load over a sufficient area to reduce the stress so it will conform to the requirements stated under "Limit of Loading."

When the combined live and dead floor loads exceed sixty (60) lb. per sq. ft., the floor joists shall rest on a steel plate not less than three-eighths (⅜) of an inch thick and of a width one-half to one inch less than the wall thickness. In lieu of said steel plate the joists may rest on a solid block which may be three or four inches less in wall thickness than the building wall, except in instances where the wall is eight (8) in. thick, in which cases the solid block shall be the same thickness as the building wall.

Thickness of Walls.—(a) Thickness of bearing walls shall be such as will conform to the limit of loading given under "Limit of Loading." In no instance shall bearing walls be less than eight inches thick. Hollow walls eight inches thick shall not be over sixteen feet high for one story or more than a total of twenty-four feet for two stories.

(b) Walls of residences and buildings commonly known as apartment buildings not exceeding four stories in height, in which the dead floor load does not exceed sixty (60) lb. or the live load sixty (60) lb. per sq. ft., shall have a minimum thickness in inches as shown in the following table.

THICKNESS IN INCHES FOR CONCRETE BLOCK WALLS

No. of Stories	Basement	First Story	Second Story	Third Story	Fourth Story
1.....	8	8	..	..	..
2.....	10	8	8	..	..
3.....	12	12	10	8	..
4.....	16	12	12	10	8

Variation in Thickness of Walls.—(a) Wherever walls are decreased in thickness the top course of

AN ATTRACTIVE HOUSE CONSTRUCTED WITH WALLS OF CONCRETE BLOCK AND STUCCO FINISH

the thicker wall shall afford a solid bearing for the webs or walls of the course of the concrete block above.

MORTARS

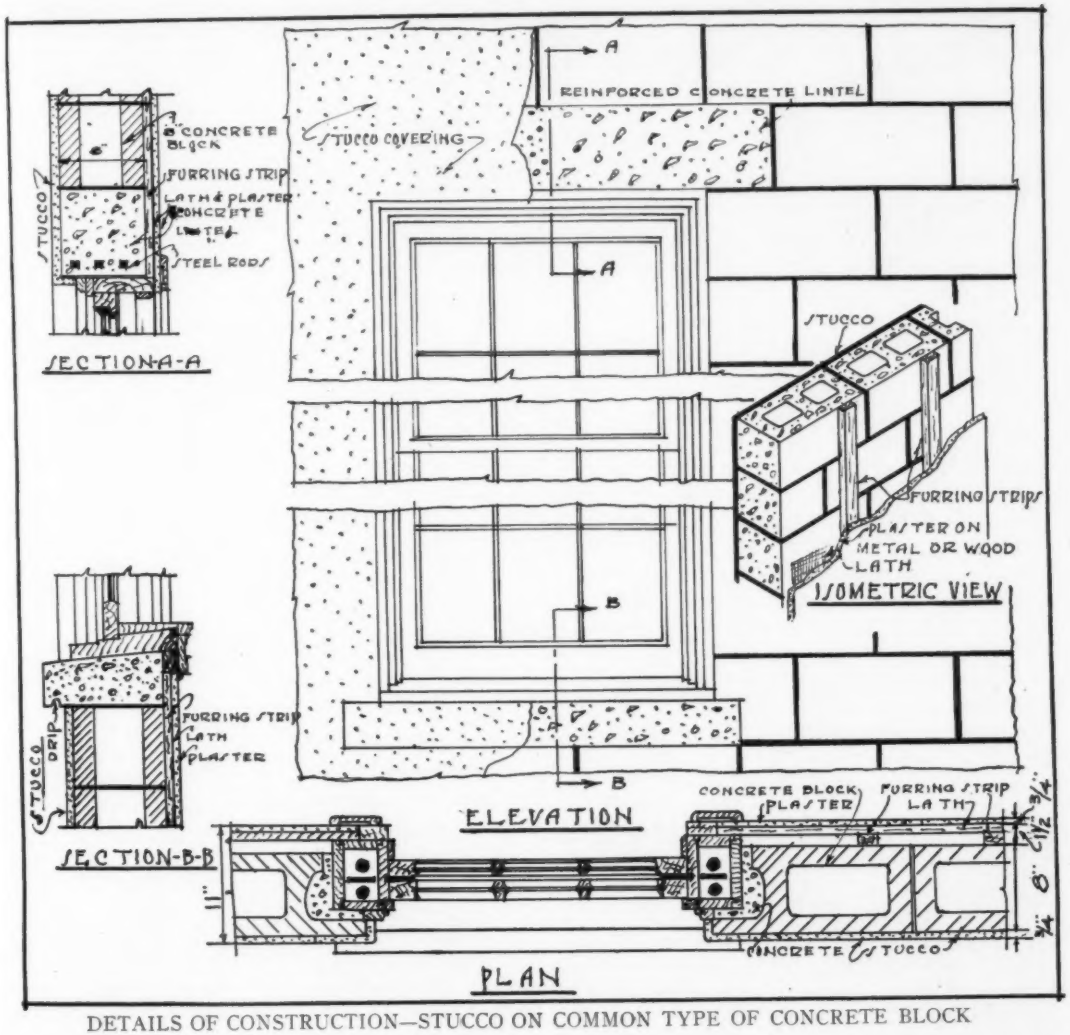
UNLESS carefully made, mortar joints are likely to be the weakest portions of a concrete block or tile wall. The essentials of a good mortar joint are:

1. It should be dense and non-absorbent.
2. It must have a sufficient compressive strength to withstand pressure in the wall without crushing.
3. It must attain strength rapidly.
4. It must be reasonable in cost and easily obtainable.
5. It must possess good working qualities.
6. It should look satisfactory.
7. It should endure permanently.

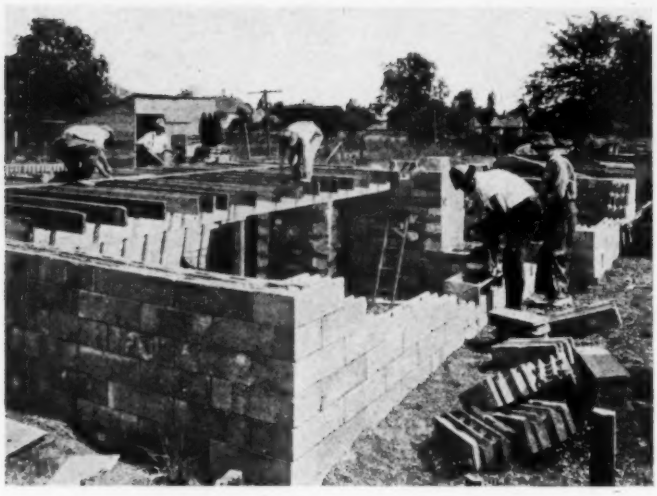
Portland cement mortar meets these requirements and should be specified for concrete block and tile wall construction.

Ingredients of Portland Cement Mortar.—The ingredients of Portland cement mortar are Portland cement, sand and water. Usually a limited amount of hydrated or well-slaked lime is included.

Sand.—Sand used for mortar should be hard, clean, free from vegetable matter and contain not to exceed seven (7) per cent by volume of clay or loam. The particles should be well-graded and



DETAILS OF CONSTRUCTION—STUCCO ON COMMON TYPE OF CONCRETE BLOCK



WALLS BEING CONSTRUCTED OF THE INTERLOCKING TYPE OF CONCRETE BLOCK

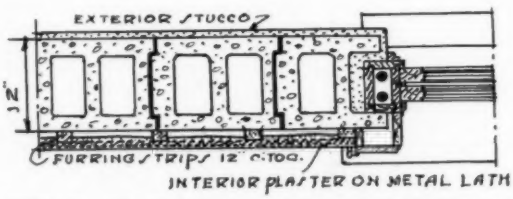
range in size from fine up to those which will just pass through a screen having 4 meshes to the lineal inch. Most masons prefer that the coarse particles predominate, claiming that coarse sand produces a more workable mortar. Sand which is not clean should be washed before using.

Cement.—Any standard brand of Portland cement may be used which meets the specifications for Portland cement adopted by the American Society for Testing Materials. Cement should be kept in a dry place until used. Cement which contains lumps which cannot be crushed with the fingers should not be used.

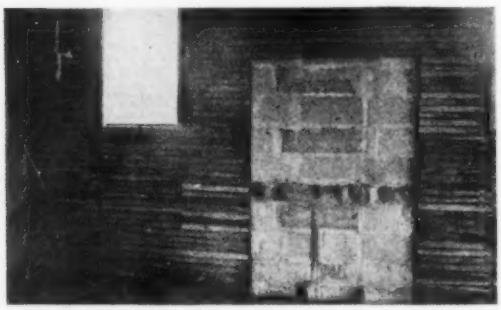
Water.—Water should be clean, free from acids and alkali. In general it can be stated that water which is fit for drinking is satisfactory for cement mortar.

Lime.—Only well-slaked or hydrated lime should be used. Lime is added to the mortar to impart to it better working qualities, thereby reducing the cost of labor in laying a given section of wall. Care should be observed not to add more lime than specified in the paragraph under "Proportions," otherwise the strength of the mortar may be materially diminished.

Proportions.—Among masons there is a wide variation in the ratio of cement and sand used in making mortar; some prefer as rich a mixture as equal parts of cement and sand, while others use a mortar containing three times as much sand as cement. A proportion of 1 sack of cement to 2 cubic feet of sand will be found satisfactory under most conditions. A mixture containing in excess of 3 cubic feet of sand for each sack of cement is not recommended. Hydrated or slaked lime may be added to the mortar in an amount not to exceed 25 per cent. by volume of the amount of cement in the mixture.



DETAIL OF WINDOW JAMB CONSTRUCTION FOR TWELVE-INCH BLOCK

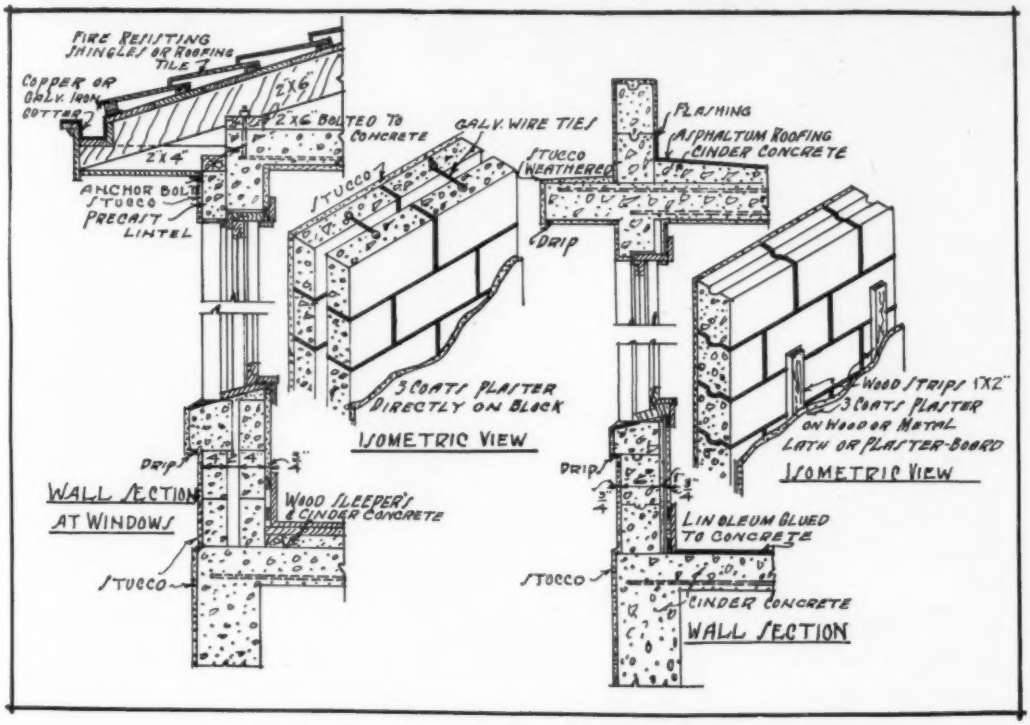


UNLESS THE AIR SPACE IN THE WALL CONSTRUCTION IS CONTINUOUS, INTERIOR PLASTERING SHOULD BE ON LATH FURRED OUT FROM THE FACE OF THE WALL AS SHOWN ABOVE

Mixing.—The usual method is to mix the cement and sand dry until the resulting mixture is uniform in color and of like character throughout. Hydrated lime may be incorporated in the mixture simultaneously with the cement and sand. When lime putty (slaked lime) is used it is customary to dissolve the putty to a creamy consistency in water and then use this lime water when mixing the mortar. The mortar may be either mixed by hand or by mechanical means. In most cases hand mixing is practiced, as the workmen can readily tell when the mass has acquired the proper consistency to obtain the best working qualities. Only as much water should be added as will, after thorough mixing, produce a mixture of such plasticity as will work to best advantage.

It is best to mix only a small batch of mortar at a time (say enough for 30 minutes' work). Mortar which has stiffened must not be remixed with water to impart to it workable qualities again. This process is commonly referred to as "retempering". It should not be permitted.

Application.—A good bond between the mortar and the block is essential. To accomplish this end, mortar should be applied with force. For best results both ends of the block should be buttered. The horizontal or supporting section of the block should be entirely covered with mortar.



DETAILS OF CONSTRUCTION—STUCCO ON CONCRETE BLOCK

At Left—Double Walled Type. Inner and Outer Shells Connected by Metal Ties Only.
At Right—Solid Block of "Book Tile" Type. Interior Furring Necessary.

WATERPROOFING THE FOUNDATION

A DRY basement is one of the requirements of good construction. When the side on which the house is to be located does not have good natural drainage it is best to waterproof the outsides of the walls below grade. No matter how much care is exercised in making concrete block or placing them in the wall it is not always possible to obtain absolutely watertight construction.

The simplest method of waterproofing is to paint the wall with hot pitch or asphalt. When this method is adopted the precaution must be taken to have the wall dry, as these materials will not adhere to a moist surface. Lines of drain tile should be laid around both the outside and inside of the wall footings and at least 6 inches below them to carry off excess water. These tile should be connected to a suitable outlet drain.

Sills and Lintels

To make sure that no moisture penetrates the walls at the sills, lintels, sill courses, lintel courses and joint courses and to prevent condensation on the inside walls at these places, all building trim should be of two-piece construction so as to provide an air space between the inner and outer sections. The space between the inner and outer sections need not be greater than ¼ inch; a continuous air space is all that is required. Each division of lintel should be reinforced according to standard methods to carry the superimposed load.

THE DOUBLE WALLED BUNGALOW READY FOR STUCCO FINISH

INTERIOR PLASTERING

SOME concrete block enthusiasts have recommended that plaster be applied directly to the block surface. These recommendations have been made despite the fact that it is customary to furr out the plaster for all kinds of masonry houses. Furring and lathing cost only slightly more when considering the total cost of the house and they assure a warmer wall. The better insulation thus provided effects a considerable saving in the winter coal bills and provides a house which is cool in summer. In no case should plaster be applied directly on the concrete surface unless the house is constructed according to the following specifications:

The wall shall be constructed of two-piece block, providing a continuous air space from the footing to the eaves and entirely around the building. All sills and lintels shall be of the two-piece type and the inner and outer sections shall be separated so as to provide a clear air space between them. The outside of the foundation below grade shall be waterproofed as hereinbefore described.

STUCCO WORK COMPLETED

SIZE OF BLOCKS*

A TABULATION of sizes of block and tile, as now manufactured, is shown in Table I. The name of the manufacturer is followed by the width, height and length of unit, the actual size of the block or tile being given. For instance, a block listed as 8″ wide, 7¾″ high, and 15¾″ long, is ordinarily referred to in practice as an 8″ x 8″ x 16″ block. These units are purposely made smaller to allow for the mortar joint which, when added to length and height, produces a unit of full length and height.

CONSTRUCTING A DOUBLE WALL WITH CONCRETE BLOCKS. IN THIS CASE THE AIR SPACE IS CONTINUOUS AND FURRING THE INTERIOR IS UNNECESSARY

As a help to the designer in determining the most desirable distance horizontally between doors and windows to corners, and also the most desirable widths of door and window opening, Table II. has been prepared. Lengths of wall sections and door and window openings, should be, as far as possible, multiples of quarter blocks.

Table II. gives the length of wall sections of from one to eighteen units by ¼ units. Your committee believes that a quarter length is as small a fraction of a unit as is necessary or desirable and that manufacturers of molds should adapt their machines and furnish suitable division plates for making ¼, ½, and ¾ length blocks. By careful design it is often possible to get along with two sizes of units—the full length and the half length units.

*From report of Sub-committee B, National Conference on Concrete House Construction.

THIS TYPE OF STUCCO HOUSE WITH TILE ROOF MAKES A PLEASING COMBINATION

TABLE I

STANDARD CONCRETE BLOCK AND TILE SIZE

Manufacture of Mold	Height, Inches	Width, Inches	Length, Inches
Anchor Concrete Machinery Co. Rock Rapids, Iowa	7 1/16	8-9-10-11-12	15 1/16 & 23 1/16
Bradstad Concrete Machinery Co. Canton, So. Dak.	7 3/4	10	23 3/4
The Brandell Co. Cincinnati, Ohio	7 3/4	4-6-8-10-12	15 3/4
Ideal Concrete Machinery Co. Cincinnati, Ohio	7 3/4	4-6-8-10-12	15 3/4-23 3/4
The Hamilton Concrete Machinery Co. Cleveland, Ohio	5	4-6-8-12	8-10-12
The Anchor Conc. Mach. Co., (Hobbs) Columbus, Ohio	3 to 12 ins.	3 to 12 ins.	3 to 24 ins.
The Besser Manufacturing Co. Alpena, Mich.	7 3/4	7 3/4-9 3/4-11 3/4	15 3/4
Flexo Concrete Mold Co. Cedar Rapids, Iowa	5 3/8-7 5/8	8-10-12	15 5/8-23 5/8
Zagelmeyer Cast. Stone Block Mach. Co., Bay City, Mich.	7 1/16	8-10-12	15 1/16-23 1/16
The Federal Cement Prod. Co. Cleveland, Ohio	5	8 1/2-12 1/2-16 7/8	12
The Ferguson Synstone Co. Denver, Colo.	11 5/8	8-12	23 5/8
The Helm Brick Machine Co. Cadillac, Mich.	7 1/4	10	23 1/4
Hydro Stone Co. Chicago, Ill.	8 5/8-11 5/8	4 1/2 to 17	23 5/8
The Multiplex Concrete Mach. Co. Elmore, Ohio	3 5/8-5 5/8-7 5/8	8-10-12	19 5/8
Peters Eastman Greer Co. Indianapolis, Ind.	3 to 6 by ins.	7-10	20
Century Cement Machine Co. Rochester, N. Y.	4 to 16 by ins.	4 to 20 by ins.	4 in. to 6 ft.
W. E. Dunn Mfg. Co. Holland, Mich.	7 3/4	8-10-12	15 3/4
Francis Concrete Machinery Co. St. Louis, Mo.	7 3/4	8-10-12	15 3/4-23 3/4
The Hayden Auto Block Mach. Co. Columbus, Ohio.	7 3/4	4-6-8-10-12	15 3/4-19 3/4-23 3/4
Northwestern Steel & Iron Works. Eau Claire, Wis.	7 3/4	9-12	23 3/4
The Pettyjohn Co. Terre Haute, Ind.	7 3/4	7 3/4	15 3/4-19 3/4-23 3/4
The Republic Iron Works. Tecumseh, Mich.	7 3/4	2-4-8-10-12	15 3/4
Stewart Mfg. Co. Waterloo, Iowa	7 3/4	8-10	15 3/4

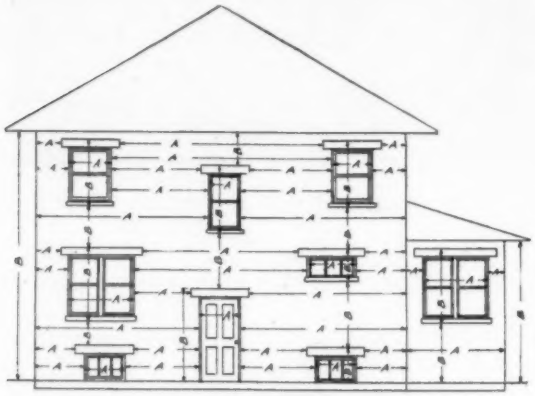
The purpose of Table III. is similar to that of Table II. It is intended to help the designer determine the most suitable height for door and window openings and other vertical wall heights.

To explain the use of Tables II. and III. a drawing (Figure 1.) of a house elevation is presented. The distance "A" corresponds to the wall lengths shown in Table II. and the distance "B" to heights specified in Table III. The purpose of both tables is to assist the designer in laying out the house so as to require no cutting of block, which is costly.

Corner block, joist blocks, sills, lintels, and other special shapes should be furnished by the concrete products manufacturer so as to make possible for the constructor to erect the building complete. Nothing detracts more from the appearance of a structure than poorly made and improperly fitted building

trim. It has been suggested that jamb block be used next to all doors and windows in places of the block with an ordinary end.

The question has arisen as to the best method for designating sizes of block, and it is recommended that the height, width and length be specified.



ELEVATION OF HOUSE ILLUSTRATING SETTING OF CONCRETE BLOCK.

FIG. I—ILLUSTRATING APPLICATION OF TABLES II AND III

TABLE II

TABLE SHOWING RELATION BETWEEN NUMBER OF COURSES OF CONCRETE BLOCK AND TILE AND THE HEIGHT OF WALL FORMED BY UNITS OF DIFFERENT SIZES

NUMBER OF COURSES	HEIGHT OF WALL SECTIONS FORMED							
	3 In. Block	4 In. Block	5 In. Block	6 In. Block	8 In. Block	9 In. Block	10 In. Block	12 In. Block
	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
1	0 3	0 4	0 5	0 6	0 8	0 9	0 10	1 0
2	0 6	0 8	0 10	1 0	1 4	1 6	1 8	2 0
3	0 9	1 0	1 3	1 6	2 0	2 3	2 6	3 0
4	1 0	1 4	1 8	2 0	2 8	3 0	3 4	4 0
5	1 3	1 8	2 1	2 6	3 4	3 9	4 2	5 0
6	1 6	2 0	2 6	3 0	4 0	4 6	5 0	6 0
7	1 9	2 4	2 11	3 6	4 8	5 3	5 10	7 0
8	2 0	2 8	3 4	4 0	5 4	6 0	6 8	8 0
9	2 3	3 0	3 9	4 6	6 0	6 9	7 6	9 0
10	2 6	3 4	4 2	5 0	6 8	7 6	8 4	10 0
11	2 9	3 8	4 7	5 6	7 4	8 3	9 2	11 0
12	3 0	4 0	5 0	6 0	8 0	9 0	10 0	12 0
13	3 3	4 4	5 5	6 6	8 8	9 9	10 10	13 0
14	3 6	4 8	5 10	7 0	9 4	10 6	11 8	14 0
15	3 9	5 0	6 3	7 6	10 0	11 3	12 6	15 0
16	4 0	5 4	6 8	8 0	10 8	12 0	13 4	16 0
17	4 3	5 8	7 1	8 6	11 4	12 9	14 2	17 0
18	4 6	6 0	7 6	9 0	12 0	13 6	15 0	18 0
19	4 9	6 4	7 11	9 6	12 8	14 3	15 10	19 0
20	5 0	6 8	8 4	10 0	13 4	15 0	16 8	20 0
21	5 3	7 0	8 9	10 6	14 0	15 9	17 6	21 0
22	5 6	7 4	9 2	11 0	14 8	16 6	18 4	22 0
23	5 9	7 8	9 7	11 6	15 4	17 3	19 2	23 0
24	6 0	8 0	10 0	12 0	16 0	18 0	20 0	24 0
25	6 3	8 4	10 5	12 6	16 8	18 9	20 10	25 0
26	6 6	8 8	10 10	13 0	17 4	19 6	21 8	26 0
27	6 9	9 0	11 3	13 6	18 0	20 3	22 6	27 0
28	7 0	9 4	11 8	14 0	18 8	21 0	23 4	28 0
29	7 3	9 8	12 1	14 6	19 4	21 9	24 2	29 0
30	7 6	10 0	12 6	15 0	20 0	22 6	25 0	30 0
31	7 9	10 4	12 11	15 6	20 8	23 3	25 10	31 0
32	8 0	10 8	13 4	16 0	21 4	24 0	26 8	32 0

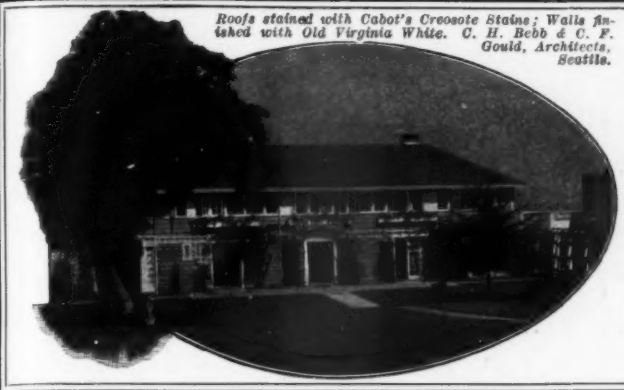
The accompanying photographs and details illustrate the construction of various types of concrete block walls as a base for stucco finish.

The next article will treat of magnesite stucco.

TABLE III

TABLE SHOWING NUMBER OF BLOCK REQUIRED FOR WALL SECTION OF VARIOUS LENGTHS

Number of Block and Fraction of Block	LENGTH OF WALL SECTIONS							
	12-INCH BLOCK		16-INCH BLOCK		20-INCH BLOCK		24-INCH BLOCK	
	Feet	Inches	Feet	Inches	Feet	Inches	Feet	Inches
1	1	0	1	4	1	8	2	0
1¼			1	8	2	1	2	6
1½	1	6	2	0	2	6	3	0
1¾			2	4	2	11	3	6
2	2	0	2	8	3	4	4	0
2¼			3	0	3	9	4	6
2½	2	6	3	4	4	2	5	0
2¾			3	8	4	7	5	6
3	3	0	4	0	5	0	6	0
3¼			4	4	5	5	6	6
3½	3	6	4	8	5	10	7	0
3¾			5	0	6	3	7	6
4	4	0	5	4	6	8	8	0
4¼			5	8	7	1	8	6
4½	4	6	6	0	7	6	9	0
4¾			6	4	7	11	9	6
5	5	0	6	8	8	4	10	0
5¼			7	0	8	9	10	6
5½	5	6	7	4	9	2	11	0
5¾			7	8	9	7	11	6
6	6	0	8	0	10	0	12	0
6¼			8	4	10	5	12	6
6½	6	6	8	8	10	10	13	0
6¾			9	0	11	3	13	6
7	7	0	9	4	11	8	14	0
7¼			9	8	12	1	14	6
7½	7	6	10	0	12	6	15	0
7¾			10	4	12	11	15	6
8	8	0	10	8	13	4	16	0
8¼			11	0	13	9	16	6
8½	8	6	11	4	14	2	17	0
8¾			11	8	14	7	17	6
9	9	0	12	0	15	0	18	0
9¼	9	3	12	4	15	5	18	6
9½	9	6	12	8	15	10	19	0
9¾	9	9	13	0	16	3	19	6
10	10	0	13	4	16	8	20	0
10¼	10	3	13	8	17	1	20	6
10½	10	6	14	0	17	6	21	0
10¾	10	9	14	4	17	11	21	6
11	11	0	14	8	18	4	22	0
11¼	11	3	15	0	18	9	22	6
11½	11	6	15	4	19	2	23	0
11¾	11	9	15	8	19	7	23	6
12	12	0	16	0	20	0	24	0
12¼	12	3	16	4	20	5	24	6
12½	12	6	16	8	20	10	25	0
12¾	12	9	17	0	21	3	25	6
13	13	0	17	4	21	8	26	0
13¼	13	3	17	8	22	1	26	6
13½	13	6	18	0	22	6	27	0
13¾	13	9	18	4	22	11	27	6
14	14	0	18	8	23	4	28	0
14¼	14	3	19	0	23	9	28	6
14½	14	6	19	4	24	2	29	0
14¾	14	9	19	8	24	7	29	6
15	15	0	20	0	25	0	30	0
15¼	15	3	20	4	25	5	30	6
15½	15	6	20	8	25	10	31	0
15¾	15	9	21	0	26	3	31	6
16	16	0	21	4	26	8	32	0
16¼	16	3	21	8	27	1	32	6
16½	16	6	22	0	27	6	33	0
16¾	16	9	22	4	27	11	33	6
17	17	0	22	8	28	4	34	0
17¼	17	3	23	0	28	9	34	6
17½	17	6	23	4	29	2	35	0
17¾	17	9	23	8	29	7	35	6
18	18	0	24	0	30	0	36	0



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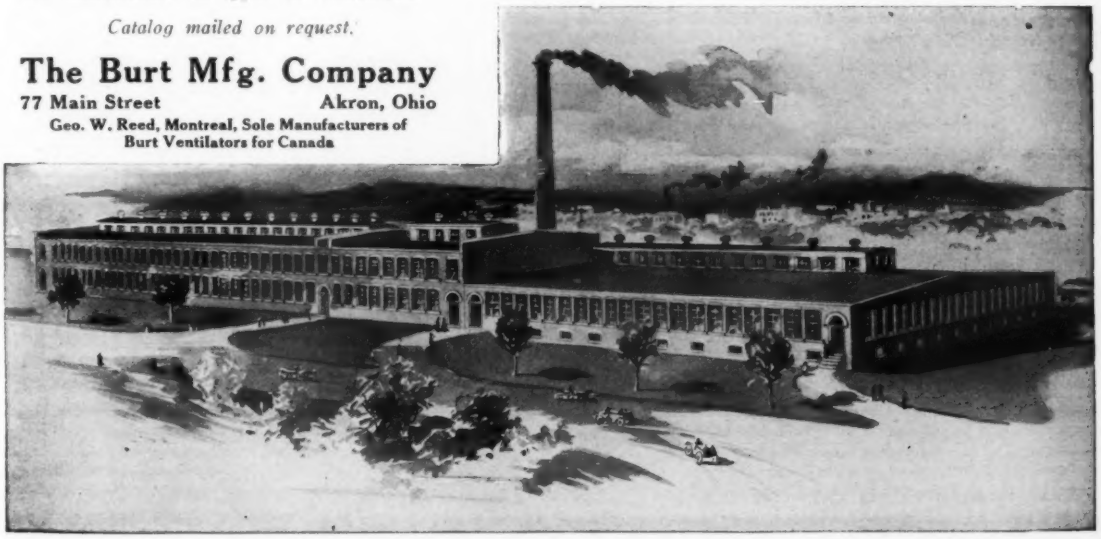


Crown Cotton Mills, Dalton, Georgia, using 23 30-inch Glass-Top "Burt" Ventilators

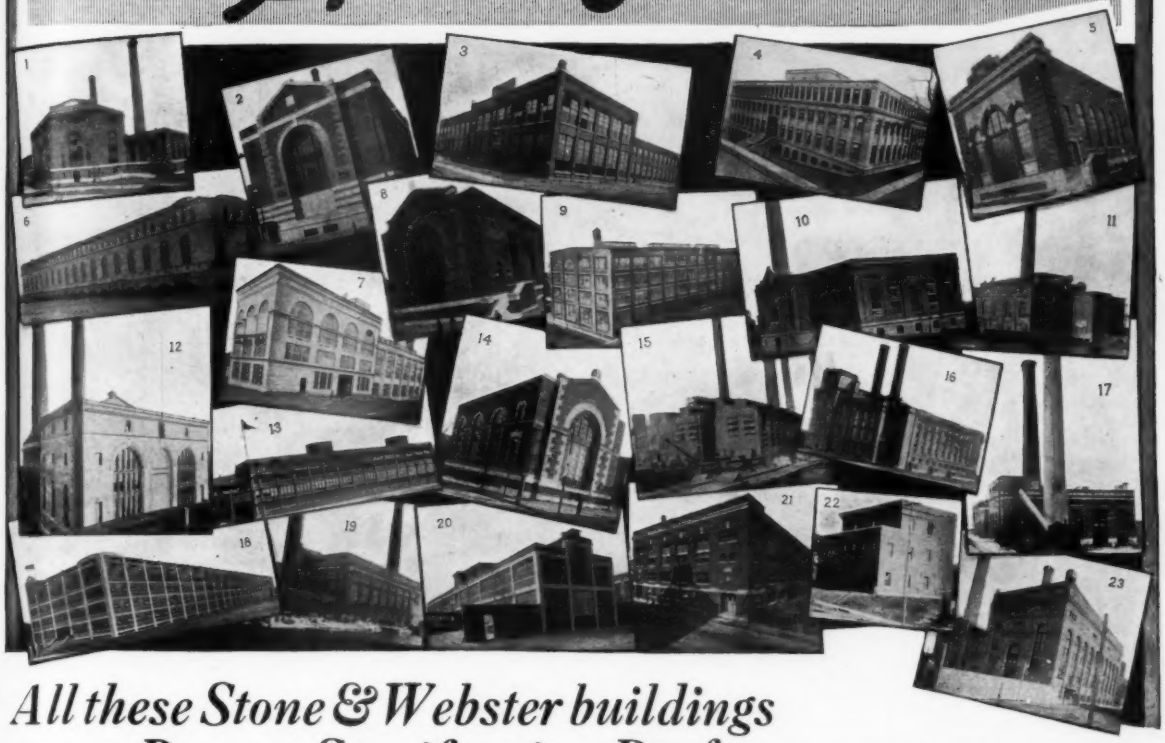
Late Quotations in Building Material Markets

(Price quotations now current on building materials and supplies as quoted by dealers and jobbers for delivery in New York, Chicago, San Francisco, Seattle, and Birmingham follow. The quotations set forth are placed before readers of THE AMERICAN ARCHITECT to afford an accurate review of market conditions, rather than for use as a basis for actual purchase. They will not only provide knowledge of the exact state of the market as to items quoted, but will also present a basis to judge conditions as affecting correlating materials.)

	New York	Chicago	San Francisco	Seattle	Birmingham
BRICK					
Common	$30.45	$14.00	$17.50	$20.00	$28.00
Face brick	55.00 to 60.00	30.00 to 40.00	62.50	65.00	45.00
BURNED CLAY (Delivered on Job)					
Block partition:					
3 in., per sq. ft.	0.13	0.10	.....	0.10½	.....
4 in., per sq. ft.	0.15	0.11	.....	0.10	.....
Wall coping (single slant):					
8 in., per lin. ft.	0.16	0.22	.....	.....	14.3
12 in., per ft.	0.26½	0.33	.....	.....	20.8
18 in., per ft.	0.54	0.66	.....	.....	33.8
(Corners and angles four times the price of one foot of coping the same size)					
CEMENT					
Per bbl. in 15-cent bags (rebate 60 cents per bbl. for bags)	3.80	3.25	3.63 to 4.00	....	4.50
FINISHED IRON AND STEEL (Mill Shipments)					
Bar iron, refined grade	.....	.....	.....	6.00	.....
Bar iron, double refined	.....	.....	.....	.....	.....
Soft steel bars	2.62 to 4.52	.....	.....	6.00	4.00
Shapes	2.72 to 4.27	.....	.....	6.00	.....
GLASS (Discounts from Manufacturer's Price Lists)					
Single strength, A quality, first three brackets	76%	77%	.....	.....	74%
Single strength, B quality	76%	77%	.....	83%	.....
Double strength, A quality	77%	79%	.....	83%	.....
Double strength, B quality	79%	79%	.....	.....	77%
GYPSUM					
Plaster board:					
27x28x1	.....	.....	.....	.....	.....
27x48x ½	0.45	.....	.....	.....	.....
32x36x ¼	0.28	0.28	.....	.....	0.40
32x36x ⅜	0.29	0.32	.....	0.36	.....
32x36x ½	0.35	.....	.....	.....	.....
Plaster blocks:					
2 in. solid, 12x30, per sq. ft.	0.13	0.15	.....	.....	.....
3 in. hollow, 12x30, per sq. ft.	0.13	0.15	.....	.....	.....
4 in. hollow, 12x30, per sq. ft.	0.14	0.17	.....	.....	.....
6 in. hollow, 12x30, per sq. ft.	0.21¾	0.25	.....	.....	.....
HOLLOW TILE					
2x 8x12 partitions, per 1,000 sq. ft.	.....	.....	80.00	.....	.....
3x12x12 partitions, per 1,000 sq. ft.	.....	150.00	108.00	105.00	112.00
4x12x12 partitions, per 1,000 sq. ft.	.....	160.00	125.00	120.00	126.00
6x12x12 partitions, per 1,000 sq. ft.	.....	230.00	154.50	170.00	154.00
8x12x12 partitions, per 1,000 sq. ft.	.....	300.00	222.50	230.00	224.00
10x12x12 partitions, per 1,000 sq. ft.	.....	350.00	276.00	.....	.....
12x12x12 partitions, per 1,000 sq. ft.	.....	400.00	.....	.....	.....
2x12x12 split furring, per 1,000 sq. ft.	.....	73.80	108.00	.....	.....
LATH					
Eastern spruce, per thousand	18.00 to 20.00	16.00 to 18.00	18.00 to 20.00	....	.....
No. 1 white pine, per thousand	15.00 to 18.00	.....	21.00 to 22.00	.....	.....
No. 1 hemlock, per thousand	15.00 to 18.00	16.00 to 18.00	18.00 to 20.00	12.50	.....
No. 1 yellow pine, per thousand	15.00 to 18.00	16.00 to 18.00	18.00 to 20.00	.....	20.00
LIME					
Common, 200 lb. bbls., per bbl.	3.80	1.75	2.90	2.85	3.00
Finishing, 300 lb. bbls., per bbl.	19.50	.....	.....	3.00	.....
Hydrated, in paper bags, per ton	.....	20.00	.....	25.00	.....
LUMBER (Retail Prices per Thousand Delivered)					
Yellow pine, No. 1 boards, 1x6	80.00	95.00	.....	.....	125.00
Yellow pine, B, and better flooring (plain)	130.00	135.00	.....	.....	135.00
Douglas fir, 6x6 to 12x12	80.00	77.00	56.00	34.00 to 36.50	.....
Oak, quartered, 1 in., F. A. S.	325.00	370.00	500.00	.....	.....
Oak, plain, 1 in., F. A. S.	225.00	260.00	320.00	.....	270.00
Oak flooring, ¼ quartered, white	220.00	370.00	490.00	.....	270.00
Maple, 1 in., F. A. S.	180.00	185.00	270.00	.....	.....
Maple flooring, ¼ clear	175.00	370.00	280.00	.....	.....
Mahogany, 1 in., F. A. S.	.....	225.00	500.00	.....	.....
Spruce, 10 in.	85.00	80 to 140	104.00	.....	.....
Cypress, 1 in., F. A. S.	150.00	150.00	.....	.....	.....
METAL LATH					
Under 100 sq. yd., per sq. yd.	0.40	.35	.....	0.42	0.42

Barrett Specification Roofs

Bonded for 20 and 10 Years



All these Stone & Webster buildings carry Barrett Specification Roofs—

READ this letter from the company which built the 23 buildings shown above:

STONE & WEBSTER
147 MILK ST. BOSTON

June 13, 1919.

The Barrett Company, New York

We are sending you a collection of photographs showing the types of structures on which we have used Barrett Specification Roofs. The collection includes industrial plants and buildings, warehouses, power stations, substations, office and monumental buildings, chemical works, etc., and it seems to us that this exhibit is better evidence of our satisfaction with your product than anything we might say.

Stone & Webster

For a great construction company like Stone & Webster, to use Barrett Specification Roofs is convincing proof of the correctness of the Barrett Specification principle of roof construction, and shows their absolute confidence in Barrett materials and Barrett Service.

Stone & Webster, as well as other important construction companies, recommend Barrett Specification Roofs because:

1—From start to finish they are assured of getting just the kind of roof they specify, with no chances for "skimping" or the substitution of inferior materials.

2—They know that all contractors are bidding on an equal basis on a standard roofing of the highest quality.

3—Our "Free Inspection Service" protects them, by placing on *us* the burden of seeing that the owner gets what he pays for and that the materials are properly applied.

4—And last and most important we furnish free a Surety Bond (details on request) which absolutely protects the owner from roofing maintenance and expense.

Is it any wonder that The Barrett Specification type of roof covers more of the prominent structures of the country than any other kind?

Copy of Barrett Specification with roofing diagrams sent free, upon request, to any one interested.

The Barrett Company

New York	Chicago	Philadelphia	Boston
Syracuse	St. Louis	Cleveland	Cincinnati
Pittsburgh	Detroit	New Orleans	Birmingham
Kansas City	Minneapolis	Dallas	Nashville
Salt Lake City	Seattle	Peoria	Atlanta
Duluth	Milwaukee	Bangor	Washington
Johnstown	Lebanon	Youngstown	Toledo
Columbus	Richmond	Latrobe	Bethlehem
Elizabeth	Buffalo	Baltimore	

THE BARRETT COMPANY, LIMITED: Montreal Toronto Winnipeg Vancouver St. John, N. B. Halifax, N. S. Sydney, N. S.

1 Harvard Power Station Extension, Boston Elevated Ry. Co.
2 Kendall Square Sub-station, Boston Elevated Ry. Co.
3 Building of S. K. F. Ball Bearing Co., Hartford, Conn.
4 Office Building, Youngstown Sheet and Tube Co., Ohio.
5 Coolidge Corner Sub-station, Boston Elevated Ry. Co.
6 Power Station, Mississippi River Power Co., Keokuk, Ia.
7 Steam Plant, Columbus Power Co, Columbus, Ohio.
8 Malden Sub-station, Boston Elevated Ry. Co.
9 Factory Building "S," Manhattan Rubber Mfg. Co. Passaic, N. J.
10 Riverside Power Station, Minneapolis General Electric Co.
11 Power Station, Tampa Electric Co., Tampa, Fla.
12 Lincoln Wharf Power Station Extension, Boston Elevated Ry. Co.
13 Warehouse, General Fireproofing Co., Youngstown, Ohio.
14 Roslindale Sub-station, Boston Elevated Ry. Co.
15 Power Station Extension, Dallas Electric Light and Power Co.
16 River Power Station, Buffalo General Electric Co.
17 Steam Power Station, Remington Arms and Ammunition Co., Bridgeport, Conn.
18 Factory and Boiler House, Westinghouse Lamp Co., Trenton, N. J.
19 Steam Power Station, Lowell Electric Light Corp., Lowell, Mass.
20 Factory Building, The Celluloid Co., Newark, N. J.
21 Factory Building, Roessler & Hasslacher Chem. Co., Perth Amboy, N. J.
22 Sub-station, Hartford Electric Light Co., Hartford, Conn.
23 Charlestown Power Station Extension, Boston Elevated Ry. Co.

Late Quotations in Building Material Markets—*Continued*

	New York	Chicago	San Francisco	Seattle	Birmingham
PIPE					
Cast iron:					
6 in. and heavier	$67.30	$76.80	.....	$92.50	$66.00
4 in.	73.30	79.80	.....	.....	69.00
3 in.	.....	86.80	.....	.....	.....
(And $2 additional for Class A and gas pipe)					
(Discounts to jobbers for carload lots on the Pittsburgh basing card; freight rates from Pittsburgh to New York, and also from Pittsburgh to Chicago, in carloads, per 100 lbs., are 27c. An additional 5 per cent discount is allowed to large jobbing interests over those listed below.)					
	F.O.B. Pittsburgh Butt Weld	F.O.B. Chicago			
Wrought:					
Steel:					
Black, ⅛ to 3 in. ..... 47 to 54 %	38 to 45.1%	.....	.....	.....	34 to 41	.....
Galv., ⅛ to 3 in. ..... 20½ to 41½%	10.1 to 30.1%	.....	.....	.....	31½ to 28	.....
Iron:					
Black, ⅛ to 1½ in. 34½%	11.9 to 22.6%	.....	.....	.....	16½ to 21½	.....
Galv., ⅛ to 1½ in. ..... +25 to 18½%	+39.9 to 4.6%	.....	.....	.....	3½	.....
	Lap Weld					
Steel:					
Black, 2½ to 6 in. ..... 50 %	41.1%	.....	.....	.....	.....	.....
Galv., 2½ to 6 in. 37½%	27.1%	.....	.....	.....	.....	.....
Iron:					
Black, 2½ to 6 in. 30½%	18 %	.....	.....	.....	.....	.....
Galv., 2½ to 6 in. 17½%	3.6%	.....	.....	.....	.....	.....
PLASTER					
Neat wall cement in 15-cent bags, per ton	23.50	20.00	$18.00 to 20.00	24.50	24.00
Finishing plaster	25.00	20.50	19.50 to 21.00	26.00	24.00
Lath mortar, in cloth bags, per ton	16.50	.....	.....	.....	.....
RADIATION					
Discount from list on standard heights	37½%	41 to 42.7%	.....	41%	45%
REINFORCING BARS					
High carbon steel from mill	48.50	.....	45.00-47.50	45.00	.....
Medium steel from mill	48.50	.....	45.00-47.50	45.00	4.75
ROOFING MATERIAL					
Tarred felt paper:					
No. 1—25 lbs. to 100 sq. ft., per ton	102.00	95 to 100	.....	120.00	95.00
No. 2—16 lbs. to 100 sq. ft., per ton	81.25	95 to 100	.....	110.00	95.00
No. 3—12 lbs. to 100 sq. ft., per ton	81.63	95 to 100	.....	100.00	.....
Rosin sized sheathing, per ton	75.00	.....	.....	110.00	.....
Corrugated roofing, galvanized, 2½ in. corrugation, over flat sheets, per 100 lbs.	0.30	.....	.....	.....	.....
SHINGLES					
Red cedar, 5 to 2, clear, per thousand	15.00	10.00	16.00	6.00	12.00
White cedar, extra star, A star, per thousand	16.00	9.50	17.00	5.75	.....
SLATE ROOFING					
	F.O.B. Cars Quarry Station				
Pennsylvania:					
Best Bangor ..... $8.00 to $11.00	.....	.....	.....	.....	.....
No. 1 Bangor Ribbon ..... 8.00 to 9.00	.....	.....	.....	.....	.....
Pen Argyl ..... 7.75 to 8.25	.....	.....	.....	.....	.....
Peach Bottom ..... 10.50 to 12.50	.....	.....	.....	.....	.....
No. 1 Chapman ..... 7.75 to 8.75	.....	.....	.....	.....	.....
Vermont:					
No. 1 Sea Green ..... 5.00 to 8.50	.....	.....	.....	.....	27.00
Unfading Green ..... 6.50 to 13.50	.....	.....	.....	.....	27.00
Red ..... 12.00 to 22.00	.....	.....	.....	....	30.00
Maine:					
Brownsville, U'f'g Black, No. 1 ..... 14.00	.....	.....	.....	.....	.....
Slater's felt, 30 lb. roll 2.00	.....	.....	.....	. .	3.00
Slaters' felt, 40 lb. roll 2.25	.....	.....	.....	.....	3.75
STRUCTURAL STEEL					
Beams and channel, 3 to 15 in., per lb.	3.47	3.47	4.45 to 5.30	4.70 to 5.00	4.70
Beams and channel, over 15 in., per lb.	3.57	3.57	5.00 to 5.40	.....	6.60
Angles, 3 to 6 in.	3.47	3.47	5.30 to 5.40	4.10	4.70
Zees and tees	3.57	3.47 to 3.52	4.50 to 5.05	.....	.....
Steel bars, half extras, from mill	4.00 to 4.75	.....	5.30	4.00	4.00
STUCCO					
In cloth, per ton (white, mixed)	22.50	20.50	.....	.....	.....
STUCCO BOARD					
Medium weight stucco board, plain, per thousand sq. ft.	65.00	65.00	.....	.....	60.00
Medium weight stucco board, creosoted, per thousand sq. ft.	70.00	70.00	.....	.....	.....
Heavy weight stucco board, plain, per thousand sq. ft.	75.00	75.00	.....	.....	.....
Heavy weight stucco board, creosoted, per thousand sq. ft.	80.00	80.00	.....	.....	.....
Medium weight stucco board, plain, narrow key, per thousand sq. ft.	75.00	75.00	.....	.....	.....
Medium weight stucco board, narrow key, creosoted, per thousand sq. ft.	70.00	70.00	.....	.....	.....
Insulating board, heavy felt background, per thousand sq. ft.	70.00	70.00	.....	.....	.....
SHEATHING BOARD					
Heavy weight, sheathing board, per thousand sq. ft.	70.00	70.00	.....	.....	65.00
Medium weight sheathing board, per thousand sq. ft.	63.00	63.00	.....	.....	.....
Stucco or plaster board, sheathing board and insulating board are in rolls containing one sheet 25 ft. long and 4 ft. wide (100 sq. ft.).					
WALL BOARD					
Wall board, shipped any length, 4 ft. wide, per thousand	45.00	60.00	.....	60.00	53.00
Packed flat in cars if ordered in less than car lots. Add $5.00 per thousand ft. for crating.					